Myanmar
Data Collection Survey on
State-Owned Enterprises in Myanmar
Final Report

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Japan International Cooperation Agency (JICA)

Japan Economic Research Institute Inc.

Daiwa Institute of Research Ltd.

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Abbreviations

ADB	Asian Development Bank
ASEAN	Association of the South East Asian Nations
BPI	Burma Pharmaceutical Industries
CBM	Central Bank of Myanmar
CSO	Central Statistical Organization
DICA	Directorate of Investment and Company Administration
IMF	International Monetary Fund
JV	Joint Venture
MEB	Myanma Economic Bank
MIC	Myanmar Investment Commission
MOC	Ministry of Commerce
MOFR	Ministry of Finance and Revenue
MOI	Ministry of Industry
MNPED	Ministry of National Planning and Economic Development
MPF	Myanma Pharmaceutical Factory
ODA	Official Development Assistance
SEE	State Economic Enterprise
SEZ	Special Economic Zone
SFA	State Fund Account
SLORC	State Law and Order Restoration Council
SME	Small and Medium Enterprise
SOE	State-Owned Economic Enterprise
SPDC	State Peace and Development Council
UFA	Union Fund Account

1. Project Objective and Scope

1.1 Project objective

Since 1988, the Republic of the Union of Myanmar (hereafter Myanmar) has adopted market oriented economic system and the share of economic contribution by the state-owned economic enterprises (hereafter SOEs) out of the total national account is on a declining trend. Nevertheless, there are yet a number of SOEs that remain non-privatized even those that are not designated as state-owned specified by the State-owned Economic Enterprises Law of 1989, rejuvenation and efficiency of such remaining SOEs are essential. Under the newly established government in March 2011, further reforms are expected in the coming future with firm intention of opening up policies initiated by President Thein Sein.

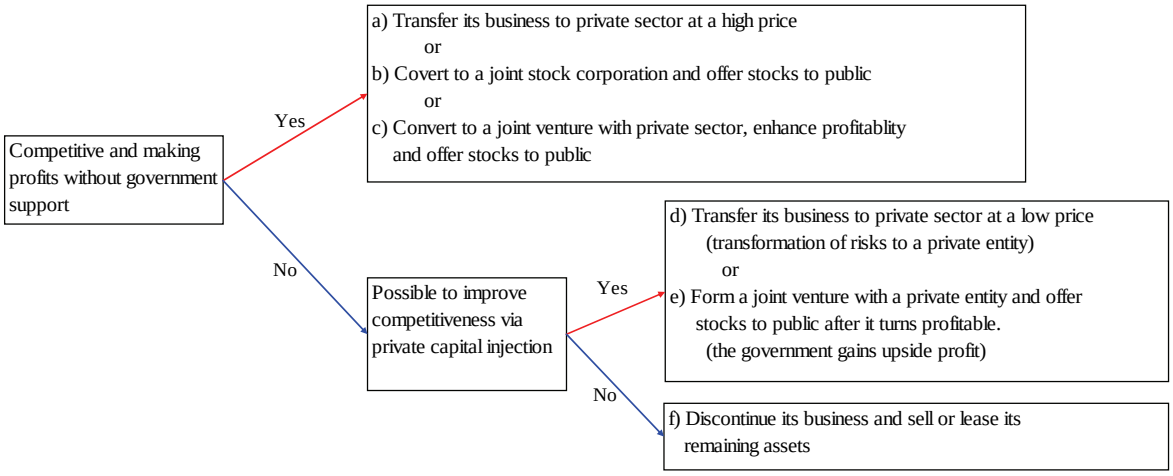
This project aimed to understand the current situation surrounding the SOEs in Myanmar and to propose policy recommendations as well as several reform plans including privatization given intensive analysis on overall business management of particular SOEs under the Ministry of Industry (hereafter MOI).

The following specific achievements were expected as an outcome of this project.

(1) Sort out relevant laws and regulations, privatization plans, statistical data and roles of concerned institutions regarding SOEs, especially focusing those under MOI.

(2) Select about 10 SOEs under MOI and conduct corporate analysis for each individual SOEs to sort out current issues such as business management, financial, production and distribution, then consider ways to mitigate and improve businesses via utilizing private capital or privatization.

Figure 1-1. Image on possible SOE reform utilizing private capital and privatization



(3) Propose several options for future business improvements as well as necessary reform plans on relevant laws and regulations to relevant government officials and stakeholders in Myanmar.

1.2 Project scope

To meet above objective, we conducted study and analysis in line with the following scope.

(1) Relevant laws and regulations, privatization plans, statistical data and roles of concerned institutions regarding SOEs and gathered information will be classified systematically to those at the national level and those relevant to MOI. Together with the analysis for individual SOEs, we will consult improvement and reform measures at a short to medium term range.

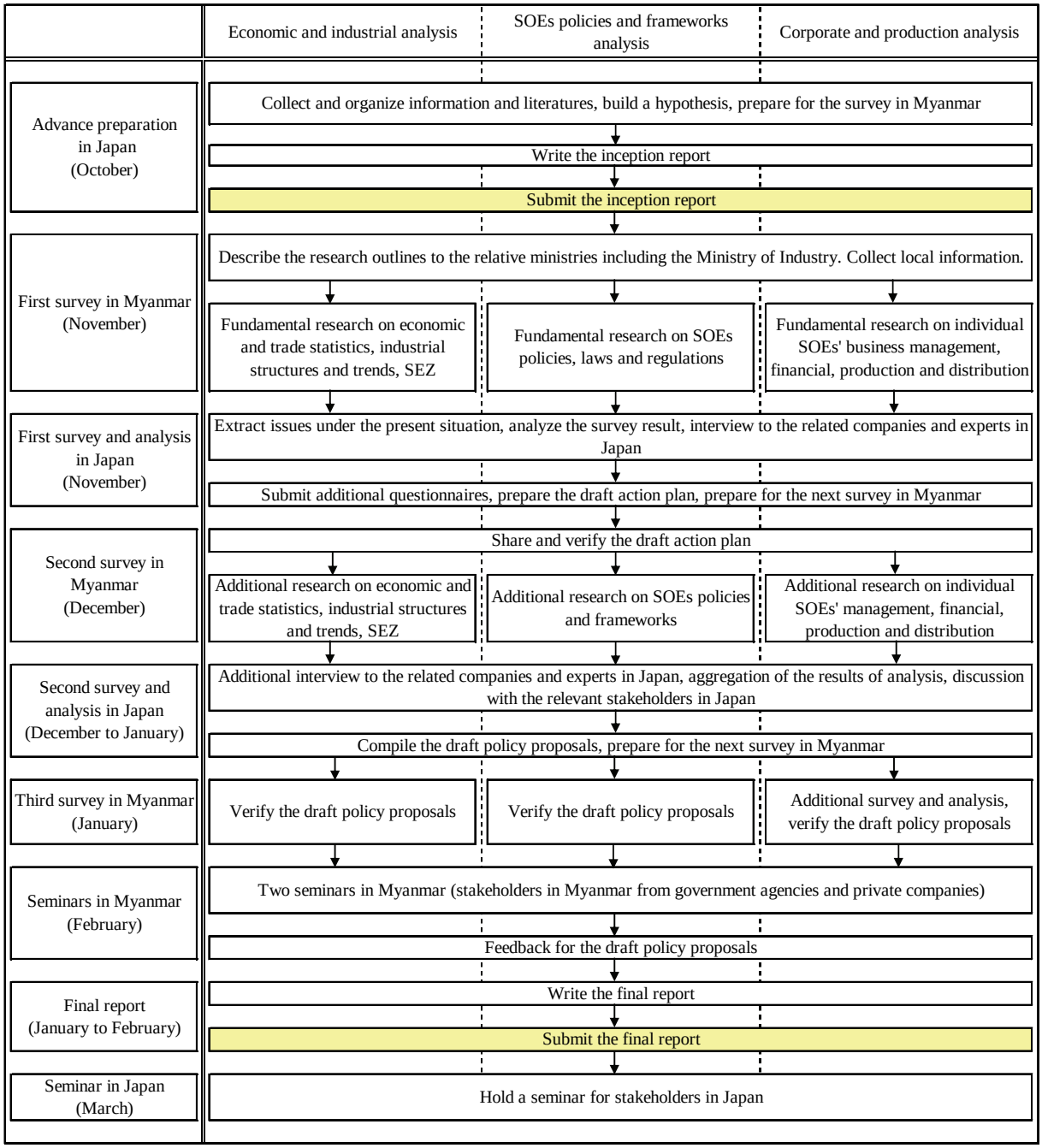
Figure 1-2. Selected SOEs under MOI

No.	Factory Name, Location	Enterprise	Main Product
1	No. (12), Htonebo	No.1 Heavy Industries Enterprise	Vehicles and components
2	No. (14), Thargaya		Engines
3	No. (16), Sinde		Agricultural equipment
4	No. (22), Belin	No.2 Heavy Industries Enterprise	Radial tyres
5	No. (31), Thayet	No.3 Heavy Industries Enterprise	Cement
6	No. (32), Kyangin		Cement
7	No. (33), Kyaukse		Cement
8	No. (1), Shwedaung	Myanmar Textile Industries	Textile
9	No. (3), Sagain		Textile
10	No. (1), Yangon	Myanmar Pharmaceutical & Foodstuff Industries	Pharmaceutical

(2) With the prospect of business climate, global competitiveness, industrial development policies and possible business opportunities with Japanese companies, 10 selected SOEs will be analyzed from various perspectives such as business management, finance, production and distribution.

The project schedule and procedure are as follows.

Figure 1-3. Project schedule and procedure



1.3 Study team

This project was conducted jointly by Japan Economic Research Institute Inc. (JERI) and Daiwa Institute of Research Ltd. (DIR)

JERI conducts research mainly on finance, industrial development and infrastructure improvement inside and outside of Japan. It has continuously engaged in research and consulting in the realm of financial sector, industrial policy and human resource development. Also, JERI has achievements in privatization of state-owned enterprises in Vietnam and Lao PDR.

DIR conducts research and analysis on various issues such as economy, capital market, and legal frameworks in Japan and other countries. Assigned by the Japanese government and international organizations, DIR has been conducting a number of projects concerning Myanmar such as technical assistance programs on economic and financial development, research and consulting projects on industrial development and human resource development.

2. Industrial Structure and Manufacturing Sector

2.1 Industrial structure

This section examines the bird-eye-view of Myanmar economy based on industry, such as agriculture, mining or manufacturing, and, ownership, government or private. We approach this subject through statistics of Myanmar government and international organizations, past literatures and interviews to government officials and private business people. While we obtained the newest available copy of Statistical Yearbook and Monthly Economic Indicators from Central Statistical Office of Myanmar, weak coverage and low credibility of such make our analysis inevitably qualitative.

2.1.1 Transitions of economic systems in Myanmar (colonial → social democracy → Burmese way to socialism → market economy under military rule → open and free market policy)

Common misperception about Myanmar's economic regime is to align it to former communist countries such as China or Vietnam. For the study of state-owned-enterprises, or "SOEs", in Myanmar, it is especially important to recognize that Myanmar had never adopted communism as its ideology and private ownership of production facilities existed even during the Socialist period.

As described by Odaka (2012) as "economic management without ideology", none of various military regimes since 1962 has had any track of economic ideology, such as capitalism or socialism, and were all pragmatic. Policies toward private sector and foreign direct invest have been swinging between accommodation/promotion for the sake of economic development and regulation/discouragement for the sake of strengthened government control. At this point, Myanmar is in "accommodation/promotion" mode for private and foreign investments as tight military control over economy was relaxed since 2011 and free competition between private players had become the cornerstone of the country's economic policy.

Ten factories that we visited during the study can be divided into three groups based on the time of establishment.

1) Those established by British interests and nationalized in the process following the independence (from late 1930s to 50s)

   Out of the ten factories visited, a cement factory in Thayet (established in 1937) and a pharmaceutical factory in Yangon (established in 1958) fall into this category. Both of them

had been expanded or partly modernized by the foreign aids from countries like Japan or China.

2) Those established with foreign assistance for the purpose of import-substitution under Burmese way to Socialism (1960s and 70s)

Out of the ten factories visited, an agricultural machinery factory in Sinde (established in 1965), an automobile factory in Htonebo (established in 1967), a cement factory in Kyangin (established in 1970), textile factories in Sagain (established in 1970) and pharmaceutical factory in Yangon (established in 1958) fall into this category.

3) Those established with Chinese assistance after the end of Burmese way to Socialism and during the military controlled market economy (from late 1990s)

Out of the ten factories visited, a cement factory in Kyaukse (established in 2002), a diesel engine factory in Thargaya (established in 2009) and a radial tyre factory in Belin (established in 2010) fall into this category.

Before describing the industrial structure of Myanmar, we would like to briefly follow the change in the country's economic systems since 19th century.

2.1.1.1 Economy under British rule, a period of foreign exploitation

According to Odaka (2012), there were several regional economic communities in the Kingdom of Burma and each community had traders and craftsmen. This was changed by the British rule, under which all the profitable economic activities, such as rice processing/distribution, oil/mining, forestry and intra-country water shipping, were controlled by British interests and manufactured goods were imported from Great Britain at a very high price.[1]

British occupation cultivated the west bank of Ayeyarwady river, once a savage land, and drastically increased the rice production[2], and profited from the processing, distribution and export of the rice grown by local farmers. At the same time, there were other economic development through oil and other natural resource development and construction of railways, roads and ports. However, the benefit of these activities was not felt by local people as the ownership belonged to the British interests and many workers were brought from India and China.

[1] "New light of Myanmar Economy", Keiso Shobo, September 2012, p3
[2] "New light of Myanmar Economy", Keiso Shobo, September 2012, p164

2.1.1.2 Social democratic system (from 1948 to 1962): Nationalization of foreign assets and fostering of private capital

As a backlash to British exploitation, leaders of independent movements such as Aung San and U Nu embraced an image of "Socialist Burma". They advocated "ultimate national ownership of all the lands and gradual nationalization of all the important industries including agriculture". Right after the independence, British-owned economic infrastructures and key industries were nationalized and, in 1950s, electricity and movie companies and markets under British interests were nationalized one after another.[3]

However, the concept of socialism at this time was quite modest and the primary policy objective was protection of the rights of farmers and laborers. At this point, the market mechanism was accepted as they are. In his "basis of Burmese democracy" speech, Aung San mentioned that "there is no use of worrying about the construction of socialist country because we do not even have capitalists. Therefore, we still need to support private enterprises."[4] U Nu regime also supported private investments by announcing the official principle of promoting foreign direct investments in areas other than natural resource development and military related industries. It was considered that U Nu had to rely on foreign capital to make up for the fiscal constraints imposed by fighting against minorities.[5]

[3] "New light of Myanmar Economy", Keiso Shobo, September 2012, p61
[4] "New light of Myanmar Economy", Keiso Shobo, September 2012, p45
[5] "New light of Myanmar Economy", Keiso Shobo, September 2012, p62

2.1.1.3 First half of Burmese way to Socialism (from 1962 to 1974): Nationalization and isolation

U Nu's policy of accepting foreign capital was regarded by hard-liners within military as a "deviation from the spirit of independence which aims at the construction of socialism". As a result, U Nu was replaced by Ne Win by military coup and the new regime announced "Burmese way to socialism". The government nationalized not only foreign banks, trading companies and other interests but also domestic manufacturers, wholesalers and retailers.[6] At the same time, the Ne Win regime adopted an "isolation policy" and distanced itself from foreign countries, including communist superpowers such as Soviet Union and China.

Economic activities were significantly damaged by the lack of profit motives and management failures caused by inexperienced military officers sent by the government. Many new state-owned factories were established for import substitution purpose, with the minimal foreign assistance including Japanese compensation for the Second World War but many of them were engaging in high cost small-scale production and located in remote places to create employment. The products from state-owned factories initially replaced some imports, thanks to high-quality achieved by the supervision of foreign engineers, but soon went out of favor due to lack of facility renovation and degradation of quality control after the departure of foreign experts.

However, our field study revealed that the government swiftly modified its nationalization policy allowed private business people to replace failed factories run by former soldiers. One local business person with Chinese origin mentioned that his father's factory was nationalized by the government in 1963 but newly factory manager sent from the military failed to run it. While the factory was never returned to his father, the government granted him a loan to restart a similar business and his family could rebuild the wealth. While the statistics is not available, many said that many of private business exited even during this period.

2.1.1.4 Second half of Burmese way to Socialism (from 1974 to 1988): Relaxation of isolation policy

In order to break through the economic stagnation, the military transferred to power to Burma Socialist Program Party consisted by former military leaders as a nominal change to "civilian rule" and carried out a series of reforms. They include giving autonomy to state-owned enterprises and increasing purchase price of agricultural products to give farmers production motives. This nominal transfer to "civilian rule" led to the relaxation of isolation policy and

[6] "New light of Myanmar Economy", Keiso Shobo, September 2012, p62

resumption of foreign aids. As a result, the economy grew for a short period of time, but, by late 1980s, economy became stagnant again and, the external debt incurred from foreign aid became an additional burden.

There is an official statistic which shows the existence of many private businesses at the end of 1980s, while many of them are small and medium sized enterprises. Figure 2-1 shows that, as of 1986, 54% of manufacturing sector and 59% of transport sector GDP were generated by the private sector and more than half of services and trading sectors were also private. On the other hand, while agriculture, cattle breeding and fishery were predominantly owned by the private, Kudo (2012) mentions that their production and marketing activities were severely controlled by the government and free market mechanism was not functioning.[7] "Cooperative" in the figure 2-1 means a group consisted by more than five Burmese grown-up citizens, aged 18 or above, to achieve certain economic goals.[8]

Figure 2-1. Share of production for each industry FY 1986 (%)

	State	Cooperative	Private
Agriculture	0.1	6.4	93.4
Cattle Breeding ・Fishery	1.3	2.6	96.1
Forestry	38.0	4.4	57.6
Energy	na	na	Na
Mining	89.8	2.2	8.0
Manufacturing	**41.6**	**4.2**	**54.2**
Electricity	100.0	0.0	0.0
Construction	88.3	1.0	10.8
Transportation	36.0	4.9	59.1
Telecom	100.0	0.0	0.0
Finance	98.9	1.1	0.0
Commerce	33.9	135	52.6

Excerpt from Kudo "Industrial Development under Military Rule" 2012

[7] "New light of Myanmar Economy", Keiso Shobo, September 2012, p172
[8] www.myancoop.gov.mn

2.1.1.5 First half of market oriented reform under military rule (from 1988 to 1997) : Expansion of the private sector

Frustrations from economic recession lead to a major democratization movement. Fear of losing control over the country, military carried out a coup in September 1988 and formed a State Law and Order Restoration Council, or SLORC, as a ruling body. Backed by the anti-Socialism sentiment of people, SLORC abolished a law for construction of socialist economy of 1965 and shifted toward market-oriented and externally-open economy, with Foreign Investment Law of 1988 which allowed foreign investment under certain conditions. State-owned Enterprise law of 1989 stipulated twelve industries for the government monopoly and opened other areas to private sectors. By this law, private economic activities were changed from “basically prohibited” to “basically free with some exceptions”.

This market oriented policies brought in foreign investments primarily to real-estate and tourism sectors. Domestic private sector also expanded by obtaining extraction rights in formerly state-run mining sector and investing in real estate development. Private investment in finance industry, one of the twelve areas for state monopoly by the SOE law, was allowed by Financial Institution Law of 1990 and total of 20 private banks were established between 1992 and 1997.[9] As Figure 2-2 shows, private share in production increased in mining, construction, finance and commercial sectors.

Market oriented reform naturally led to the privatization of certain SOEs and the Privatization Committee was formed in January 1995 with Secretary 1 of the SLORC representing the Chairman. However, drastic SOE reform was not carried out. While small facilities, such as movie theaters, rice mills and repair shops, were privatized, many new factories were newly constructed. During our field study, we have not been able to obtain any persuasive rationale for the addition of SOEs after the abolishment of Burmese way to Socialism. However, several government officials cited job creation in country-side or absence of private capitalists in Myanmar, as reasons for establishment of new SOEs during 1990s and 2000s.

[9] “New light of Myanmar Economy”, Keiso Shobo, September 2012, p151

Figure 2-2. Share of production for each industry as of FY 1998 and change in private share from FY1986 (%)

	State	Cooperative	Private	Change in private from FY1986
Agriculture	0.2	1.9	97.9	4.5
Cattle Breeding, Fishery	0.3	1.1	98.6	2.5
Forestry	46.2	0.6	53.2	-4.4
Energy	99.9	0.1	0.0	n.a
Mining	10.8	1.0	88.2	80.2
Manufacturing	**28.2**	**0.9**	**70.8**	**16.7**
Electricity	99.9	0.1	0.0	0.0
Construction	45.8	0.2	54.0	43.2
Transportation	29.8	1.0	69.2	10.1
Telecom	100.0	0.0	0.0	0.0
Finance	54.8	14.4	30.7	30.7
Commerce	21.3	2.4	76.3	23.7

Excerpt from Kudo “Industrial Development under Military Rule” 2012

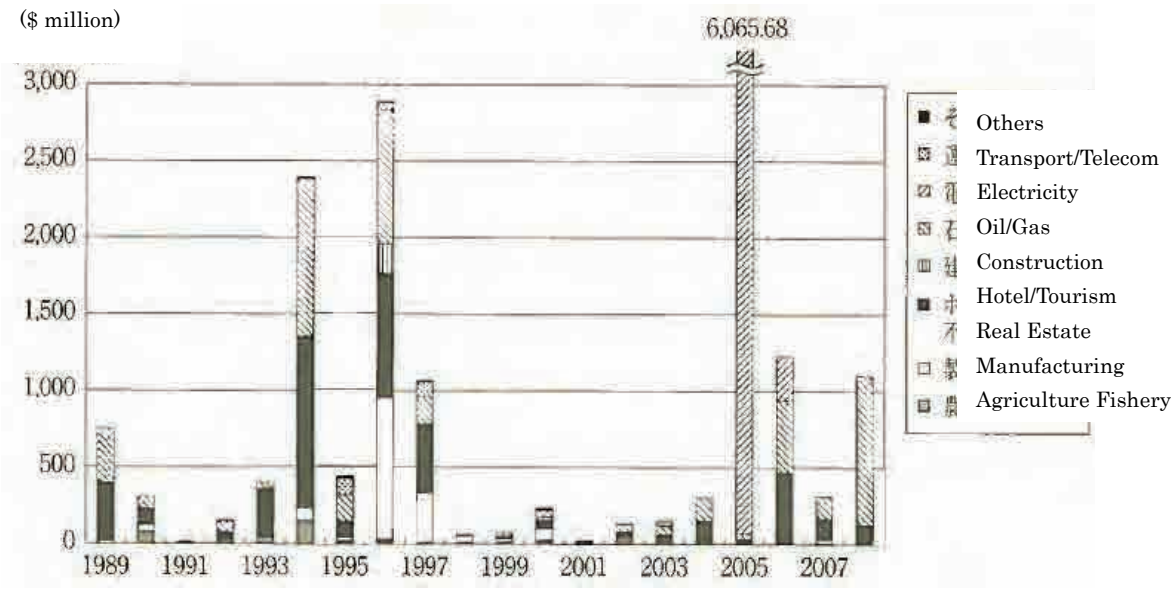
2.1.1.6 Second half of market oriented reform under military rule (from 1997 to 2011) :Strengthened control over economy and import restriction

Market oriented economic growth receded after the Asian financial crisis in 1997. The setback was partially caused by the drop in foreign direct investments but many people point out that the fear of foreign intervention felt by the military leaders after they witnessed severe restrictions imposed by IMF and foreign creditors on Thailand or Indonesia during the crisis.

During our interviews to private business people, many respondents pointed out that, while the market mechanism still remained on surface, the government intervened to almost every aspects of private economic activities and had full control over the economy. State Peace and Development Council (SPDC), governing body renamed from SLORC in 1997, established Trade Policy Council and carried out policies to reduce the outflow of hard currency and concentrate foreign reserve to the government. Such policies include restriction of unessential goods import “Export First Policy” or imposition of 10％ “export duty” (8% commercial tax + 2% income tax). While the hard currency income was greatly increased by the export of natural gas started in the year 2000, the military government maintained tight control over economy as informal control of economy brought in a large profit. The idea of import substitution was also maintained and, according to the article in Myanmar times in 2010, then Minister of Industry (1)

was complaining that “despite import-substitution policy of the government, some consumers prefer imported goods and weaken GDP”.[10]

Figure 2-3. Approved Foreign Direct Investments in Myanmar



Excerpt from Kudo “Industrial Development under Military Rule” 2012

In pursuit of rent seeking, the military government revised State Owned Enterprise Law in 1997 to enable itself to own businesses through wholly owned subsidiaries, MEC (Myanmar Economic Corporation) and UMHCR (Union of Myanmar Economic Holdings). Some of the profitable businesses were transferred from the government to MEC or UMHCR and those companies also established new companies with various privileges. New private business groups with strong ties with the military, called Cronies, were also formed since late 1990s. While the controlled economy at this time has commonalities with Burmese way to Socialism, the level of corruption had become much worse. KUDO (2010) points out that “cleanliness that Burmese people had been proud of during socialist period was lost during this period.”[11]

Figure 2-4 shows the change of private share in GDP between the first half of market-economy, or SLORC period, and the latter half, or SPDC period. It shows the shrinking private sector in the construction and finance sector and expansion in manufacturing, electricity, transportation, services and commerce. While the increase in private manufacturers was mostly

[10] “Minister urges local firms to register”, Myanmar Times Vol.26, No.514, 2010, mmtimes.com
[11] Industrial Policy, Structure and Locations during the Transition toward a Market-oriented Economy in Myanmar, Toshihiro Kudo, IDE-JETRO 2010

from small and medium food processors, we should also bear in mind that former government factories transferred to MEC and UMEHL were also counted in the private sector. At the same time, there is a possibility of overestimation in manufacturing sector as it could include natural gas production, which had become one of the largest exporting items since year 2000.[12]

Figure 2-4. Share of production for each industry as of FY 2007 and change in private share from FY1998 (%)

	State	Cooperative	Private	Change in private from FY1998
Agriculture	0.4	2.4	97.2	-0.7
Cattle Breeding, Fishery	0.1	0.7	99.2	0.6
Forestry	50.0	0.3	49.7	-3.5
Energy	76.3	9.3	14.4	14.4
Mining	2.9	0.2	96.9	8.7
Manufacturing	**9.2**	**0.2**	**90.6**	**19.7**
Electricity	79.5	0.3	20.2	20.2
Construction	60.1	0.0	39.9	-14.1
Transportation	1.5	0.1	98.4	29.3
Telecom	100.0	0.0	0.0	0.0
Finance	68.9	3.8	27.3	-3.4
Commerce	5.0	2.4	92.7	16.4

Excerpt from Kudo「Industrial Development under military rule」2012

Private share of 92.7% in commerce sector coincides with our interview to the Ministry of commerce and growth in private transport matches the prevailing bus services by private providers. However, telecom is still a monopoly by the government and certain sectors, such as domestic airlines, river transports and railways are still dominated by the state. Electric sector shows entrance by private sector because Chinese companies invested in electricity generations.

As mentioned earlier, despite the formation of privatization commission in 1995 and sale of over 100 government properties, such as small factories, land plots, buildings and rice mills, total number of SOEs continued to grow until 2008. However, the privatization was suddenly accelerated since 2009 and, in 2010 alone, over 110 SOEs, 32 buildings and 246 gas stations and 8 wharfs at Yangon port were reported to be privatized. Sector-by-sector analysis reveals that the privatization was concentrated on certain sectors such as transport vehicles and food

[12] "New light of Myanmar Economy", Keiso Shobo, September 2012, p296

processing, while there has not been any change in other sectors.

Figure 2-5. Number of State-Owned-Enterprises (as of March-end)

(source) Central Statistical Organization (CSO) Statistical Yearbook 2010

Some observers saw this accelerated sale of privatization favorably as a "prelude for free market economy", while many criticized it as "the last minute sale of precious government assets to people related to the militaries in non-transparent manner".

2.1.1.7 Political and economic liberalization (from 2011 to present): Free competition and free trade

Following a approval of new constitution 2008, SPDC transferred the power to civilian regime led by President Thein Sein, a former 4th ranked general of the military. The new regime initiated a series of political liberalizations, including the release of Aung San Suu Kyi and other political prisoners, and also loosened control over economy by relaxing import restrictions and lowering the level of intervention to private business activities. As most private business people appreciated the policies of the present regime during our interview, we also witnessed the progress toward economic liberalization, as well as freedom of expression. In September 2011, the government relaxed an import restriction of Automobiles (further described in "2.2.2.2 Automobile" section) and, in April 2012, multiple exchange rates were unified and export-first-policy was abolished. Officials at the Ministry of Commerce mentioned that import

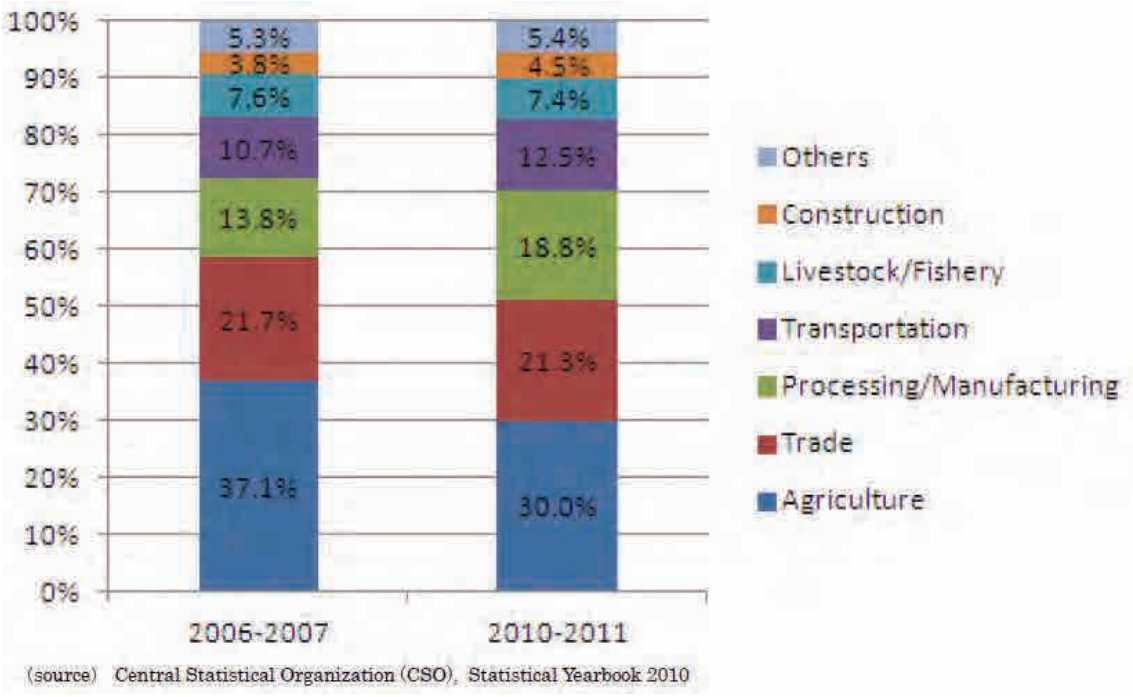
tariffs for 80% of major items had already been lowered to 5% or below, and certain items, such as agricultural machinery, already enjoyed zero tariff and automatic import licensing. These open and free economic policies led to influx of foreign businesses, which is fueling a boom in office, hotel and high-end residential markets. Relaxation of car imports gave birth to the car distribution industry and improved image of the country benefits tourism industry by attracting a large number of foreigners. On the other hand, domestic manufacturers including state-owned factories are concerned about increase competition with imported goods and some private business people are lobbying elected law makers against free trade and FDI policies.

The government is also trying to improve the process for SOE privatization by reshaping the Privatization Commission with a Vice President being a chairman and economic ministers being members. While the privatization is a part of overall policy framework of converting the government role from a player to a referee, it also stems from more pressing need of reduction in fiscal deficits. However, many of senior government officials only talk about theoretical methodologies, such as joint venture with private entities or leasing of government assets but do not seem to have considered how to dispose loss making SOEs with limited hope for turn around.

2.1.2 Statistical analysis of industry structure

According to Statistical Yearbook issued by Central Statistical Office, agriculture was the largest industrial sector in the composition of GDP as of March 2011, followed by commerce, manufacturing and processing and transportations. When compared to the industrial composition to GDP as of March 2007, or five years ago, the share of agriculture has decreased and that of manufacturing and processing increased.

Figure 2-6. Composition of GDP by industry in Myanmar



However, it must be noted that flaws of statistics in Myanmar have been pointed out by many observers. In our study, we noticed that the cement production of private manufacturers, which is more than 5 times bigger than that of SOEs, is not captured in the GDP. On the other hand, some of the state-owned factories have admitted to report much higher production figures for GDP calculation than actual. Therefore, we should take the chart above with caution.

There are other possibilities that the 18.8% share of manufacturing sector is overestimated. Potentially the largest impact is from the application of official exchange rate for international trade, which was less than 6 kyats/$ while market rate as of now is around 850 kyats/$. Manufacturing SOEs benefit from cheap kyat denominated import costs while export by forestry and mining SOEs can be underestimated. At the same time, trading sector may be underestimated due to the existence of many trades that are not captured by GDPs, including border trades with China and Thailand

When we interviewed private business people or business consultants in Myanmar about industrial structure, most respondents say “Myanmar is a country which exports primary goods such as natural gas, agricultural products and precious stones and imports industrial products. Due to ad hoc economic management by the military and lack of economic infrastructure, Myanmar is not a good place for manufacturing business.” In fact, many of the products in the supermarkets, such as soft drinks of snacks, are imported from Thailand or Singapore and the situation is the same for stores of electric appliances, agricultural machineries and tyres.

These findings from the field survey coincide with the statistics of United Nations, which is exhibited in Figure 2-7 and 2-8.

Figure 2-7. Major imports of Myanmar in 2011 ($ million)

Items	Value	Top Exporters
Gas	3,075	Thailand 3,075
Cork/Wood	969	India 590, China 278
Vegetable/Fruit	905	India 586, China 72
Apparel/ Clothing	845	Japan 346, South Korea 233
Non-metallic Mineral	798	China 777
Seafood	286	Japan 67, Thailand 61, China 58
Metalliferous Ores/Scraps	248	China 229
Rubber	217	China 105, Malaysia 96
Cereals	155	Côte d'Ivoire 59, Indonesia 20
Footwear	102	Japan 88, South Korea 5

Source: UN Comtrade

Figure 2-8. Major imports of Myanmar in 2011 ($ million)

Items	Value	Top Exporters
Road Vehicle	1,306	China 762, Japan 214, Thailand 83
Iron/Steel	1,119	China 670, India 154, Korea 144
Specialized Machinery	1,019	China 352, Thailand 229, South Korea 164, Japan 113
Textile Yarn	930	China 591, Thailand 150, Korea 80, Japan 54
Petroleum	920	Thailand 408, Singapore 289, China 141
Manufactures of Metal	530	China 221, Russia 144
Vegetable Fats	492	Malaysia 296, Indonesia 147
General Machinery	449	China 253, Singapore 65, Thailand 48
Electrical Machinery	412	China 178, Thailand 83, Singapore 48
Generator	355	China 230, Russia 39, Singapore 38

Source: UN Comtrade

Top of the export categories by far was the natural gas to Thailand which alone accounted for 38% of total exports in 2011. The runner-ups were wood to India/China, 12% of exports, vegetables to India, 11%, apparel products to Japan/Europe, 11%, and precious stones to China, 10%. If the gas pipeline to China is completed in 2013, the natural gas import will be even

larger. The export is concentrated to certain items as top ten categories combined account for 95% of all the trade.

On the other hand, composition of $12.2 billion import in 2011 was very diverse. The sum of top ten categories constitutes 62% of total and the largest category of “road vehicle” represents only 11% to the total, followed by steel, specialized machinery, textile products and oil, each accounts for 9%. While Myanmar produces sufficient food for domestic consumption, it also imports $600million of edible products and beverages. It is expected that the import will continue to increase as a result of a series of import liberalization measures introduced in 2011.

2.1.3 Position of SOEs in the economy of Myanmar.

In the modern history of Myanmar, the government had repeatedly tried to modernize the industry and substitute imports through establishment of state-owned factories but with little track record of success. The first trial was by King Mindon in late 19th century as he tried to modernize the country to counter British aggression. He established state-owned factories of silk/cotton fabrics, sugar and weapon/ammunitions with technical assistance from France and Italy. However, these factories could not compete with imports and losses put a pressure on the countries fiscal position.[13] The same plight as current SOEs struggling to complete with imports existed over 100 years ago.

Figure 2-9 shows the share of production in each industry based on the ownership in2007. SOEs are playing predominant roles in energy, electricity, construction and finance and Telecom is a state monopoly. The government is also a major player in domestic airlines and a sole provider of inland shipping and railway services. On the other hand, less-than 10% share of SOEs in manufacturing sector is considered to be smaller today as private sector has been growing in the last several years. Of the factories that we visited, cement and pharmacy are the only areas that SOEs may have 10% share in the market and other products’ market share is considered to be minimal.

[13] “New light of Myanmar Economy”, Keiso Shobo, September 2012,p6

Figure 2-9. Share of production for each industry as of FY 2007 (%)

	State	Cooperative	Private
Agriculture	0.4	2.4	97.2
Cattle Breeding ・Fishery	0.1	0.7	99.2
Forestry	50.0	0.3	49.7
Energy	76.3	9.3	14.4
Mining	2.9	0.2	96.9
Manufacturing	**9.2**	**0.2**	**90.6**
Electricity	79.5	0.3	20.2
Construction	60.1	0.0	39.9
Transportation	1.5	0.1	98.4
Telecom	100.0	0.0	0.0
Finance	68.9	3.8	27.3
Commerce	5.0	2.4	92.7

Excerpt from Kudo “Industrial Development under military rule” 2012

Regarding the issue of SOE privatization, government officials of Myanmar and foreign aid agencies only talk about corporatization or equitization because they tend to think only about monopoly or dominant SOEs such as telecom, electricity and finance. However, the government of Myanmar will also have to consider the serious downsizing of SOEs with low importance to the country, such as less than 10% share in GDP, and with low economic value.

2.2 Overview of manufacturing sector

2.2.1 Current status of manufacturing sector

We could not identify any detailed statistics regarding manufacturing industry. Responding to our interview, a major local industrial research firm commented that it also had to rely on interviews because government statistics was insufficient and not reliable. We used relatively reliable corporate registration data, as well as literature search and interviews.

In Myanmar, the registration to Directorate of Industry Supervision and Inspection (DISI) is required for all the private companies with machinery with three horse powers or more, as well as employee of 10 people or more. Registration statistics are published on ad hoc basis and, according to 2007 data, about 44,000 companies are registered. However, Myanmar times reported in 2010 the possibility of mass violation of this requirement, citing a comment from then Minister of Industry (1) that true number of companies was 120,000 and 55,000 companies

were not fulfilling the responsibility. Based on this article, about 65,000 companies are registered in 2010, which would be equivalent to 47% increase from 2007. Registered companies are divided into three categories, small, medium and large, based on the number of employees. Small company is less than 50 employees, medium less than 100 employees, and large being over 100 employees or machine with 50 horse powers or more. Therefore, many of large companies can be a size of SMEs by other countries' standard.

In terms of industry, food/beverage was the largest with 29,000 companies registered and most of them were small companies. Transport vehicle and electric appliance industry had smaller number of registrations but with higher ratio of large companies. Many of "transport vehicle manufacturers" are considered to be established for the purpose of evading the import restriction of cars and engage in assembly of cars dismantled in a foreign country and shipped as separate parts to Myanmar.

Figure 2-10. Industrial and size distribution of registered enterprises

No.	Industry	Size				Share in registered (%)
		Large	Medium	Small	Total	
1	Food and beverages	1,867	3,931	23,053	28,851	65.89
2	Construction materials	446	499	2,117	3,062	7.00
3	Clothing	275	370	1,256	1,901	4.34
4	Mineral and petrochemicals	174	310	1,200	1,684	3.85
5	Personal goods	267	299	452	1,018	2.32
6	Household goods	113	69	125	307	0.70
7	Printing and publishing	18	69	190	277	0.63
8	Industrial raw materials	92	254	407	753	1.72
9	Agricultural equipment	13	27	45	85	0.19
10	Machinery and equipment	12	82	170	264	0.60
11	Transport vehicles	139	12	78	229	0.52
12	Electric appliances	29	10	21	60	0.14
13	Others	165	809	4,324	5,298	12.10
Total		3,610	6,741	33,438	43,789	100.0

Source: Quoted from "Business and investment environment of Myanmar", JETRO Yangon, September2009

As for the geographical distribution, nearly half of large companies are concentrated in Yangon areas and many of medium sized companies are in Yangon and Mandalay, 24% and 28% respectively. Other companies are spread all over the country.

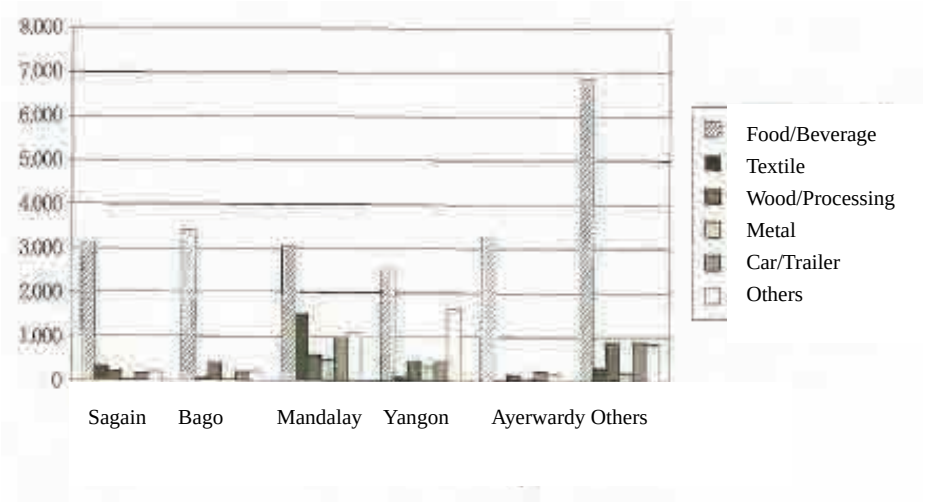
Figure 2-11. Geographical distribution of registered enterprises by size

No.	Industry	Size				Share in registered
		Large	Medium	Small	Total	
1	Kachin	20	88	880	988	2.26%
2	Kayin	8	219	146	373	0.85%
3	Kayah	41	19	503	563	1.29%
4	Chin	-	1	539	540	1.23%
5	Sagaing	230	741	3,739	4,710	10.76%
6	Tanintharyi	119	77	697	893	2.04%
7	Bago	187	607	3,973	4,767	10.89%
8	Magway	82	224	1,923	2,229	5.09%
9	Mandalay	772	1,876	5,120	7,768	17.74%
10	Mon	124	226	1,999	2,349	5.36%
11	Rakhine	69	61	2,017	2,147	4.90%
12	Yangon	1,512	1,632	2,947	6,091	13.91%
13	Shan (South)	88	141	2,356	2,585	5.90%
14	Shan (North)	49	203	1,003	1,255	2.87%
15	Ayeyarwady	310	626	5,595	6,531	14.91%
Total		**3,611**	**6,741**	**33,437**	**43,789**	**100.00%**

Source: Created from the information provided by the website of MOI, as of September 2009

Industry specific regional distribution is as exhibited figure2-12. While food/beverage companies exist all over the country, textile, wood processing, metal and transport vehicle are concentrated in Mandalay areas. The reason for diverse location of food/beverage factories is because they need to be close to either the farmland or the market.

Figure 2-12. Number of registered companies in major areas as of April, 2007



Excerpt from Kudo "Industrial Development under Military Rule" 2012[14]

According to Kudo (2012), Yangon has various industries, such as rubber/plastic products, non-iron metal products, publishing/printing, chemical products and papers. On the other hand, Mandalay has traditional apparel/blanket manufacturers and repair shops and spare parts factories for transport vehicles at industrial zones established in early 1990s. These repair shops and spare part factories developed on the back of severe import restrictions and the relaxation of such since 2011 is considered to have negative impact on them. Trade liberalization policy should have a similar effect over repair-industry for other machineries, as well.

2.2.2 Current status of products to be surveyed

2.2.2.1 Textile

Many of the local people said during our interviews that most apparel products that they buy at local shops are imported. Based on data obtained from UN Comtrade, import of fabric and apparel products was $1,050 million and the net import was $200 million, 20 times and 4 times bigger than the sales of state-owned textile factories respectively. On top of this, there may be sizable unrecorded imports from the border and, if that is a case, the share of the domestic production will be even smaller.

[14] "New light of Myanmar Economy", Keiso Shobo, September 2012, p183

Figure 2-13. Textile related trade in 2011 (thousand USD)

	Import	Export	Net Import
Yarn , Fabric	930,458	9,806	920,652
Textile fiber	22,360	825	21,535
Apparel closing	97,446	844,580	-747,134
Total	1,050,264	855,212	195,052

Source: UN Comtrade

Most apparel products sold at shopping malls in Yangon, Mandalay and Naypyitaw are imports and SOEs' products are sold at shops in villages owned by Ministry of Industry.

Male and female shirts manufactured at SOEs

(Pictures taken during field trip in December 2012)

Cotton yarn and fabric are one of the major import items to Myanmar with the value of $930 million and 63% of them are from China and 16% are from Thailand.

Figure 2-14. Major fabric exporters to Myanmar in 2011 (thousand USD)

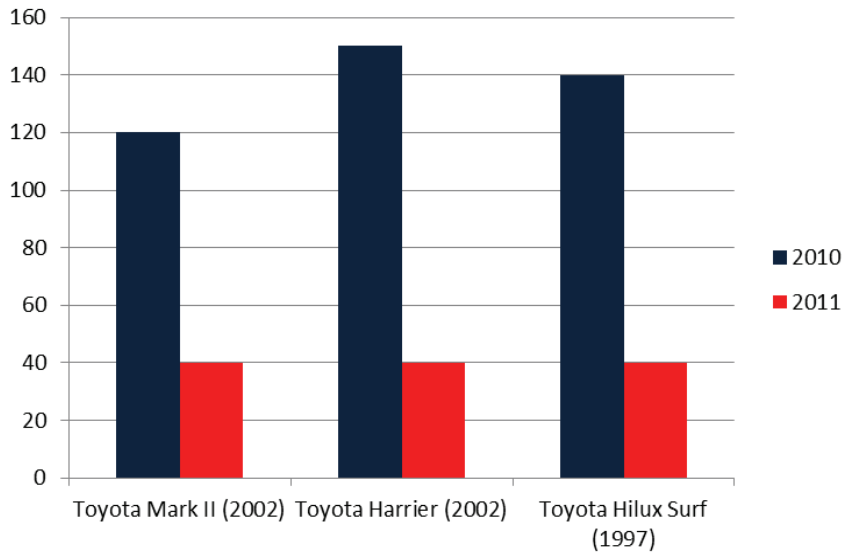
Country	Value
China	591,232
Thailand	149,868
Rep. of Korea	80,420
Japan	57,812
Indonesia	15,712
Hong Kong	11,275
India	10,355
Singapore	4,712
Malaysia	2,837
Italy	2,276

Source: UN Comtrade

2.2.2.2 Passenger cars

Several business people mentioned jokingly during our interview that there were over 300 automobile manufacturers in Myanmar. Those “automobile manufacturers” are engaged in Dismantled Knock Down, or DKD, in which their partners in foreign country dismantled a passenger car and ship the parts of the cars separately to Myanmar, and then DKD companies reassembled imported parts and obtain “made-in-Myanmar” certification. This kind of business developed on the back of severe import restriction of passenger cars and cars could be imported only by a limited kind of people, such as sailors and Myanmar citizens working abroad. Due to the scarcity of cars in good condition, prices of cars in Myanmar were more than 10 times higher than those of “free trade countries”. However, the government relaxed the import restriction in September 2011 by allowing owners of twenty to forty years old cars to replace it with newly imported vehicles. As a result, the domestic price of cars dropped significantly and DKD companies lost its meaning.

Figure 2-15. Change in price of popular passenger cars in Myanmar (million kyat)



Quoted from Thura Swiss Newsletter, May 10, 2012

Relaxation of car import restrictions was expanded further by raising the maximum price of imported car from $5,500/unit to $66,000 in January, 2012. In May 2012, the government started to waive "scrapping the old car" condition for import of cars produced in 2007 or after, on condition that the importer maintains a foreign currency deposit at Myanmar Foreign Trade Bank (MFTB) or Myanmar Investment and Commercial Bank (MICB). This means that the government allowed the increase of cars in Myanmar. Since the waiver of "scrapping the old car" requirement of May 2012, the number of registered cars increased 13% to 306 thousand in five months to October 2012.[15] Car import from Japan is boosted by these policy changes and the first 11 months of 2012 marked 578% increase from 19,625 in 2011[16] to 113,373.[17]

While Japan is by far the largest passenger car exporter to Myanmar, the largest exporter of road vehicles including trucks, busses and two-wheelers was China in 2011. However, sudden increase in passenger car imports may lead Japan to the top road vehicle exporter in 2012.

[15] Selected Monthly Economic Indicators, October 2012, Central Statistical Organization
[16] Used car export statistics2011, Planetcars website
[17] Japan export car inspection center website

Figure 2-16. Top road vehicle exporters to Myanmar in 2011 (thousand USD)

Country	Total Value	Passenger Car
China	761,606	17,239
Japan	213,836	137,380
Thailand	183,294	28,685
Singapore	52,590	3,804
Indonesia	32,266	0
Rep. of Korea	32,103	1,519
India	10,092	54
Malaysia	4,394	32

Source: UN Comtrade

Rapidly growing car market in Myanmar is still significantly smaller than Thailand or Indonesia, both with average sales of 1 million cars per year. Also, over 110 thousand cars imported from Japan may not be sustained as it was a result of the rebound effects from decade-long import-restrictions. Given the uncertainty over the market size, Suzuki remains to be the only auto manufacturer planning to establish production facilities in Myanmar.

On February 6, 2013, Suzuki announced the establishment of its wholly-owned subsidiary, Suzuki (Myanmar) Motor Co., Ltd., with shareholders' equity of $7 million, in order to restart the production of light trucks in Myanmar. In 1998, Suzuki formed a joint venture with the Ministry of Industry and produced a small passenger car, Wagon R, and light trucks but terminated it in 2010. Suzuki has been continuing the maintenance of its factory in Yangon even after 2010 and had been waiting for the chance to restart. However, the average annual production by Suzuki/MOI joint venture was several hundred and even maximum was 1,200[18] and the production under the newly established subsidiary is expected to be modest. Wagon R, which is price about JPY 1.1 million or $12 thousand, was sold by Suzuki/MOI at the price of $30 thousand. Such pricing in no longer competitive under liberalized car market in Myanmar and mass production is necessary to achieve economies of scale. For the establishment of mass production facilities, Myanmar has to establish not only industrial infrastructure, such as Thilawa SEZ, but also a policy to promote car manufacturing industries.

Ministry of Industry is still producing passenger cars at Htonebo factory but the demand for the government products is minimal. Htonebo factory was established with Japanese assistance and initially produced Mazda JEEP with almost 100% of components produced domestically. As the technology became obsolete and degradation of production technology, the

[18] Nikkei Inc. " Suzuki Motors to Restart Production in Myanmar" , Nov 12, 2012

production of Mazda JEEP was terminated in 2008.

Mazda JEEP produced by Ministry of Industry until 2008

(Picture taken during the field study in November 2012)

Ministry of Industry's Htonebo factory is now engaged in knock-down production of pick-up trucks called "Grand Tiger", which is licensed by the medium size Chinese auto manufacturer, ZX Auto. Htonebo factory produces body parts from steel imported from China, but most of other components, including engine, electric pats, bearings, are imported from China, India and others. While this Grand Tiger models are priced cheaper than imports of similar vehicle at about $27,000, private consumers do not purchase them due to the low quality and bad reputation. The only purchasers are the military and the police but their purchase amount is also decreasing due to free trade policies.

Grand Tiger currently produced by MOI

(Picture taken during the field study in December 2012)

2.2.2.3 Tyre

Tyre purchasers can be divided into auto manufactures and car owners. Since Myanmar does not have a large auto manufacturing industry, most sales are for replacement purposes. While inferior road condition requires frequent replacement of tyres, the market size is not large as there are only 300,000 passenger cars exist in Myanmar, as of October 2012.

Domestic production of tyres is carried out by MOI's Thaton (bias tyre) and Belin (radial tyre) and a private manufacturer, Yangon Tyre, which started production last year. However, domestic market is dominated by imports.

Products of Yangon tyre, the first private manufacturer

(Picture taken during the field study in December 2012)

According to UN Comtrade, tyres are mostly imported from neighboring countries with large auto industries, such as China, Thailand and India and European brands are imported through Singapore. We visited tyre retailers in Yangon, Mandalay and Pyay and confirmed that global manufacturers like Bridgestone and Michelin are not as popular as cheaper brands from emerging countries.

Figure 2-17 Tyre exporters to Myanmar in 2011 (thousand USD)

Country	Value
China	78,064
Thailand	60,908
Singapore	12,460
India	12,360
Indonesia	6,167
Korea	4,376
Japan	1,340

Source: UN Comtrade

Belin factory's production size is very small when compared to imports. Belin factory's sales in 2011-2012 was Kyat 1,450 million, which is about $1.7 million or less than 1% of total tyre imports.

2.2.2.4 Cement

While the statistics is not available for domestic private production, we estimated from our interview to Ministry of Industry and a private cement manufacturer that current cement consumption is considered to be 5 million tons per year. This estimated figure is consisted by 2 million tons from private manufacturers, 0.6 million tons from Ministry of Industry and 2.4 million from imports. Cement is a bulky product and freight cost is very important factor of market competitiveness. This is especially true for Myanmar where the transport infrastructure is still poor and transport cost is very expensive. As a result, domestic market is divided into two, the southern market, which is closer to Yangon port and dominated by imports, and the northern market, which is dominated by domestic products.

Figure 2-18 shows the flow of cement imports and locations of domestic cement plants. Domestic plants are concentrated near Mandalay, the largest city in the north, and there are two plants in Naypyitaw, where the demand for cement consumption is high. The largest plant is MEC plants in Hpa An. The locations of two MOI factories that we visited are on Ayeyarwady River.

Signboard of imported cement from Thailand (at retailer in Yangon)

(Picture taken during the field study in December 2012)

Figure 2-18. Location of cement factories and flows of imports

Source: International Cement Review, April 2012

Based on UN Comtrade, Thailand is by far the largest cement exporter to Myanmar with the export value of $130 million in 2011, followed by China with $28 million and Malaysia with much $1 million. Due to high transport costs, other countries with long distances to Myanmar are not exporting much to Myanmar and all the wholesalers and retailers that we visited in Yangon and Mandalay carried only Thai imports and domestic products. Figure 2-18 also suggests import from Bangladesh but Bangladeshi export statistics does not show any cement exports in UN Comtrade. However, there was a news report that the port of Teknaf was booming from exports to Myanmar, including cement, aluminum products and others.[19]

Figure 2-19. Major cement exporting countries in 2011 (thousand USD)

Country	Value
Thailand	128,742
China	27,955
Malaysia	1,135
Pakistan	602
Korea	248
Indonesia	225
Singapore	64
India	60

Source: UN Comtrade

Most existing cement factories, except for MEC's Hpa An plant with production capacity of 4,800 tons/day, are small in scale with production capacity of 500 tons/day or smaller. This is because of the poor road infrastructure which makes it difficult for mass transportation of fuel and final products. Many small plants employ wet production method as it is easy to operate and the cost disadvantage over dry-method is not significant for a small plant. Smaller scale of production results in higher cost than mass productions in Thailand.

[19] BBC News " Bangladesh bids to boost trade with Burma" , Dec 18, 2012

Figure 2-20. Domestic cement factories (tons/day)

Company Name	Factory location	Process	Production Capacity	Expansion Plan
Ministry of Industry	Thayet, Magway	Wet	700	
Ministry of Industry	Kyangin, Ayeyarwady		1,600	
Ministry of Industry	Kyaukse, Mandalay	Dry	500	
Mandalay Cement Ind			250	
AAA		Wet	800	*400
Tiger Head			300	700
UMEHL			1100	
YCDC	Thazi, Mandalay		500	1,500
NDC	Laeway, Napyitaw		500	1,000
Max Cement			500	1,500
Dragon Cement	Pinlaung, Shan	Wet	400	
MEC	Hpa An, Kayin	Dry	4,800	
Total production capacity			11,950	4,700

＊AAA has already obtained permission for expansion from MIC

Source: MOI factories; Field Study, Others; International Cement Review, April 2012

Reflecting a rapid economic growth, several new factories are under construction and their production capacities are bigger than existing ones with 1,000 tons/day. The new factories employ dry process and most of them are located near Mandalay, which is the center of upper-Myanmar market and close to coal mines in Shan and Chin states.

Figure 2-21. New cement plants approved or under consideration by MIC (as of April 2012)

Approved (tons/day)

Company Name	Factory location	Process	Production Capacity	Construction
Shwe-Taung	Pyinyaung, Thazi	Dry	1,000	Started
Htoo			1,000	Started
KBZ	Pangpet, Taungyi		1,000	Started
Yuzana	Tharabwin, Tanasary		1,000	
Total production capacity per day			4,000	

Under consideration

Myanmar Cowntone	Banmaw	Dry	1,000
Thandawmyat	Kyaukse		1,000
Tatluyinn	Thazi		1,000
Minn Anawrahta	Pinlaung		1,000
Ngwey Yi Pale Mining	Naungcho		1,000
Nyinyar Swan-arr	Kalaw		1,000
June Satmu	Kyake-maraw		1,000
Total production capacity per day			7,000

Source: International Cement Review, April 2012

On top of these, many more plans for new cement factories have been reported to be submitted to the government for review. The domestic production capacities may double in the next several years.

Figure 2-22. Plans for new cement factories submitted to the government(April, 2012)

(tons/day)

Company Name	Factory location	Process	Production Capacity
Sun Lin Int	Wai Maw, Kandaw Yan	Dry	1,000
Jade Land Myanmar	Banmaw, Sinn-Khann		1,000
Tun Thwin	Kalay, Indine-gyi		1,000
Asia Phyo	Zinn village, Kant-balu		1,000
IGE	Kyaukse, Taung-daw		1,000
Group of four	Pyinyaung, Thazi		1,000
Green Asia			1,000
Edin			1,000
Tarmoe Nye	Larsho, Mal-han		1,000
Pacific Link	Kyake-maraw, Kawt-panaw		1,000
Zay Kabar	Kyake-maraw, Ni-tonn		3,300
Farmar Phoyazar	Kyake-maraw, Mayangon		1,000
United Cement	Hpa An, Kaw-pyin		1,000
Total production capacity per day			15,300

Source: International Cement Review, April 2012

Also, there have been news reports that cement producer in other ASEAN countries, such as Thailand and Indonesia, are planning to establish their own factories in Myanmar. Local business people predict that their factories shall be located in Tanintharyi Division, which faces Andaman sea and easy to import cheap coal from Indonesia.

2.2.2.5 Agricultural machines

Based on date from UN Comtrade, Total exports of agricultural machinery excluding tractors was about $32million in 2011, which is 25 times bigger than the tillers sales of MOI's Sinde factory in FY2011-2012. Since the government has abolished import tariff for the import of agricultural machinery, the import value is expected to have been increased in 2012. The liberalization of agricultural machinery was designed to promote agriculture by lowering the price of advanced machineries.

Figure 2-23. Major exporters of agricultural machinery, excluding tractors in 2011

(thousand USD)

Country	Value
China	14,179
Thailand	11,977
Korea	2,652
Singapore	1,019
India	895
Malaysia	526
Japan	247

Source: UN Comtrade

As for tractors, there is no domestic production and Thailand is the largest exporter, followed by China. Many of Japanese companies are trying to expand export of tractors to Myanmar and many of the Japanese branded machines that we witnessed in retail shops in Yangon and Mandalay were made in Thailand.

Tiller produced at Sinde factory

(Picture taken during the field study in November 2012)

Figure 2-24. Major tractor exporters to Myanmar 2011 (thousand USD)

Country	Value
Thailand	8,303
China	5,651
Korea	3,950
India	2,948
Japan	1,508

Source: UN Comtrade

Japanese brand tractor on display at a retail shop in Mandalay

(Picture taken during the field study in December 2012)

2.2.2.6 Pharmaceutical products

Pharmaceutical products are also dominated by imports. According to some MOI staffs, its "market share is about ten percent", but we have not been able to verify this statistically. When we compare the total import of medicine, $233 million in 2011, and the sales of No.1 Pharmaceutical factory, Kyat 6,594 million in FY2011-2012, the factory's share is only 3%, based on 850 kyat/$. While we heard that several private supplements manufacturers exist, private business people complained that MOI is blocking the private entry into manufacturing of pharmaceutical products to protect its market share.

India, a major manufacturer of generic drugs and the neighbor, was the largest exporter of medicine in 2011, with the market share of 32%, followed by Thailand with 24% market share and China with 11% share.

Figure 2-25 Major medicine exporter to Myanmar in 2011 (thousand USD)

Country	Value
India	75,090
Thailand	56,256
China	25,549
Belgium	15,740
Indonesia	10,885
France	8,421
Malaysia	7,346
Singapore	7,009
Korea	5,250
Germany	4,402

Source: UN Comtrade

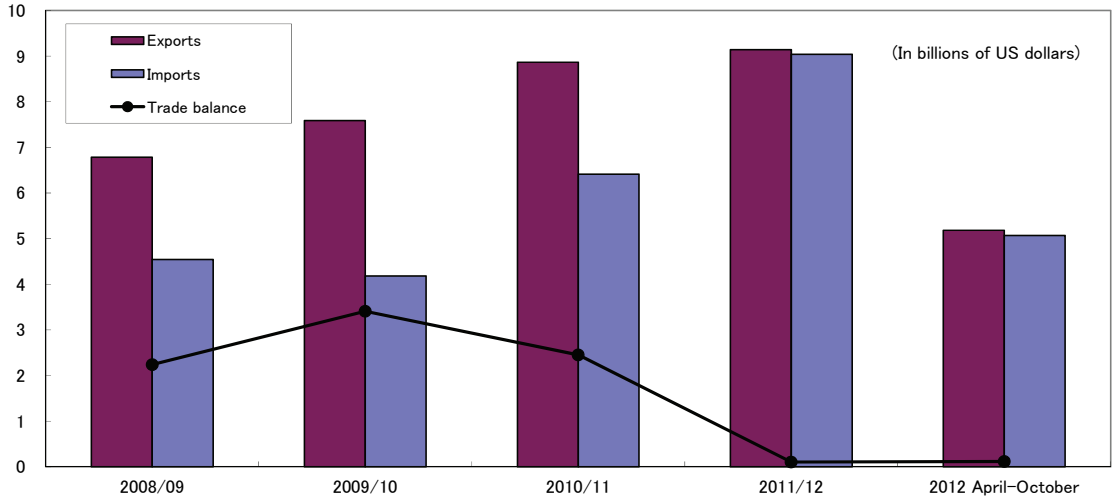
Supplement and Medicine produced by Ministry of Industry
on display at retail shop in Mandalay

(Pictures taken during the field study in December 2012)

2.3 Myanmar export and import trend

2.3.1 Availability of data and trend of trade balance

Figure 2-26. Trend of Trade Balance



Source: CSO, Selected Monthly Economic Indicators, October 2012.

2.3.1.1 Foreign exchange rates

The government has published trade statistics quoted in kyats in the past, using official foreign exchange rates. Since the official and market exchange rates were wide apart at the time, both exports and imports quoted in kyats in percent of GDP since FY2007 have recorded unrealistic 0.1%.

However since 2012, Central Statistical Organization (CSO) has begun to publish trade statistics quoted in US dollars. According to the statistics[20], Myanmar's exports amounted to 9.14 billion US dollars, its imports 9.04 billion US dollars, and its trade balance 0.10 billion US dollars in FY2011. Although the trade balance ran persistent deficits in 1990s, the full-scale production and exports of natural gas have made it into a surplus. However, in FY2011 while the export increased a little from the previous year (+3.1%), the import expanded by a big jump of 40.9%, resulting in a sudden decline of trade surpluses. In FY2012 (April – October), the export amounts 5.18 billion US dollars, the import 5.07 billion US dollars, hence the trade balance records 0.11 billion US dollars.

[20] Central Statistical Organization, Selected Monthly Economic Indicators, October 2012.

2.3.1.2 Coverage

Not only foreign exchange rates but also coverage of trade statistics remains a question of accuracies. The next table shows comparison between UN Comtrade and CSO statistics. Figures in UN Comtrade statistics indicates combined exports and imports reported by Myanmar's trading partners.

Figure 2-27. Comparison of foreign trade statistics (in millions of US dollars)

Exports to the rest of the world			
UN Comtrade		CSO	
CA2011	8,043.1	FY2011	9,135.6
CA2010	6,391.1	FY2010	8,861.0
CA2009	5,840.4	FY2009	7,586.9
CA2008	5,202.1	FY2008	6,779.1

Imports from the rest of the world			
UN Comtrade		CSO	
CA2011	12,203.8	FY2011	9,035.1
CA2010	8,843.3	FY2010	6,412.7
CA2009	6,070.9	FY2009	4,181.4
CA2008	5,384.1	FY2008	4,543.3

Exports to China			
UN Comtrade		CSO	
CA2011	1,679.9	FY2011	2,214.3
CA2010	966.1	FY2010	1,203.6
CA2009	646.1	FY2009	617.2
CA2008	647.5	FY2008	617.7

Imports from China			
UN Comtrade		CSO	
CA2011	4,821.5	FY2011	2,786.8
CA2010	3,475.5	FY2010	2,168.5
CA2009	2,261.2	FY2009	1,258.2
CA2008	1,977.8	FY2008	1,208.2

Notes: UN Comtrade: calendar years, CSO: fiscal years.

Source: UN Comtrade and Central Statistical Organization, Selected Monthly Economic Indicators, October 2012.

Looking at the comparison, differences in imports are much larger than those in exports, which are mainly explained by differences in imports from China.

According to Kudo[21], along the border between Myanmar and China, there are 16 gates (11 large gates) in Yunnan Province of China. By contrast, there are only 3 official gates in Myanmar side reflecting the trade statistics; therefore, official trade statistics issued by Myanmar only reflect partial trading activities. It had been told that other gates except for the 3 official gates are set up in the area effectively controlled by the ethnic minorities. In addition, smuggling trade is running rampant, which is also not counted in trade statistics.

2.3.2 Export and import trend by country

On exports by country in FY2012 (April – October), according to CSO statistics, Thailand commanded 45.42% of exports, and China 24.1% with high growth rates in recent years, followed by India, Japan and Singapore. We also acknowledged a similar trend from the UN Comtrade data.

Figure 2-28 Exports by country (CSO)

Exports (in millions of US dollars)	FY2008	FY2009	FY2010	FY2011	FY2012	
					(April-October)	(%)
Thailand	2,631	3,216	2,905	3,824	2,351	45.4
China	618	617	1,204	2,214	1,248	24.1
India	804	1,013	872	1,046	612	11.8
Japan	184	177	237	320	228	4.4
Singapore	833	670	457	543	174	3.4
Korea	63	76	148	215	155	3.0
Malaysia	312	153	438	152	52	1.0
Indonesia	28	37	41	41	22	0.4
Germany	54	41	38	42	20	0.4
Philippines	9	27	22	34	15	0.3
Pakistan	30	20	20	23	12	0.2
Hong Kong	673	948	1,895	41	12	0.2
United Kingdom	52	37	35	17	6	0.1
United States	1	3	2	29	2	0.0
Others	488	552	547	594	271	5.2
Total	6,779	7,587	8,861	9,136	5,182	100.0

Source: CSO, Selected Monthly Economic Indicators, October 2012.

[21] Kudo, T., “Chugoku no Tai Myanmar Seisaku: Kadai to Tenbo” (in Japanese), Institute of Developing Economies, 20th August 2012.

Figure 2-29 Exports by country (UN Comtrade)

Exports (in millions of US dollars)	FY2008	FY2009	FY2010	FY2011	
					(%)
Thailand	3,377	2,782	2,814	3,268	40.6
China	648	646	966	1,680	20.9
India		1,182	1,122	1,262	15.7
Japan	315	341	385	590	7.3
Korea	116	78	160	299	3.7
Malaysia		145	229	234	2.9
Singapore	89	118	83	86	1.1
Germany	102	81	78	84	1.0
Indonesia			32	71	0.9
United Kingdom	64	52	52	66	0.8
Others	491	415	469	403	5.0
Total	5,202	5,840	6,391	8,043	100.0

Source: UN Comtrade.

As for the imports by country in FY2012 (April – October), according to CSO statistics, China accounted for 31.7%, Singapore 26.9% with high growth rates, and Japan 12.3% which has been rapidly increasing since FY2011, followed by Thailand, Malaysia and Korea. On the other hand, according to the UN Comtrade data, the values of imports are quite larger than those of CSO statistics, and the percentages of China and Thailand are much higher while those of Singapore are quite lower, resulting from the above-mentioned border trades with China and Thailand.

Figure 2-30 Imports by country (CSO)

Imports (in millions of US dollars)	FY2008	FY2009	FY2010	FY2011	FY2012	
					(April-October)	(%)
Singapore	1,050	1,202	1,645	2,516	1,607	31.7
China	1,208	1,258	2,169	2,787	1,361	26.9
Japan	166	259	256	502	624	12.3
Thailand	395	379	709	691	391	7.7
Malaysia	350	160	145	303	197	3.9
Korea	189	224	304	452	185	3.7
Indo	146	194	195	325	161	3.2
Indonesia	210	140	275	432	110	2.2
Germany	47	33	52	95	61	1.2
United States	80	19	59	264	39	0.8
France	21	36	41	65	13	0.2
United Kingdom	6	6	19	27	8	0.2
Hong Kong	33	11	8	10	6	0.1
Others	640	262	533	565	303	6.0
Total	4,543	4,181	6,413	9,035	5,068	100.0

Source: CSO, Selected Monthly Economic Indicators, October 2012.

Figure 2-31 Imports by country (UN Comtrade)

Imports (in millions of US dollars)	FY2008	FY2009	FY2010	FY2011	(%)
China	1,978	2,261	3,476	4,821	39.5
Thailand	1,318	1,545	2,073	2,846	23.3
Singapore	1,286	891	1,159	1,213	9.9
Korea	244	406	479	667	5.5
Malaysia		211	370	559	4.6
Japan	188	202	262	503	4.1
India		208	273	456	3.7
Indonesia			284	359	2.9
Russia	32	45	63	270	2.2
Australia	27	46	73	67	0.5
Others	312	255	333	443	3.6
Total	5,384	6,071	8,843	12,204	100.0

Source: UN Comtrade.

2.3.3 Major Imports and Exports

Figure 2-32. Trend of major exports

Exports (in millions of US dollars)	FY2008	FY2009	FY2010	FY2011	FY2012 (April-October)	FY2012 (%)
Gas	2,385	2,927	2,523	3,503	2,145	41.4
Pulses	745	930	800	986	499	9.6
Garment	292	283	379	498	368	7.1
Wood	429	513	615	625	367	7.1
Fishery products	272	274	283	443	229	4.4
Rice	198	254	198	267	114	2.2
Raw rubber	23	75	154	130	45	0.9
Base metal and ores	32	33	42	71	40	0.8
Sesamum seeds	31	34	45	58	32	0.6
Jade	656	939	2,017	34	9	0.2
Maize	26	2	11	47	3	0.1
Tamarind	4	3	2	9	3	0.1
Hide and skin	2	3	5	4	3	0.1
Onion	4	1	-	0	2	0.0
Others	1,680	1,315	1,787	2,460	1,323	25.5
Total	6,779	7,587	8,861	9,136	5,182	100.0

Source: CSO, Selected Monthly Economic Indicators, October 2012.

On exports by commodity in FY2012 (April – October), natural gas is dominant, which summed up 41.4% of exports, and almost all of which were exported to Thailand. The exports of natural gas are expected to increase further after a pipeline from Myanmar to China is completed. Next, pulses (9.6%) such as matpe and pedesein are significant, which mainly exported to India. Once garments (7.1%) exported to the North America and European countries

were the driving forces of exports from the end of 1990s to the beginning of 2000s. After that, the exports of garments rapidly decreased due to economic sanctions imposed by several countries against Myanmar. However, garment export has remarkably been increasing since FY2010, with Japan and Korea being the highest destinations. Woods (7.1%) such as teak and hardwood are mainly exported to India, while fish and shellfish (4.4%) to Japan, Thailand and China. Primary commodities, except garments, are prominent in the list of exports.

Figure 2-33. Trend of major imports

Imports (in millions of US dollars)	FY2008	FY2009	FY2010	FY2011	FY2012 (April-October)	FY2012 (%)
Non-electric & transport equipment	1,328	900	1,201	1,824	1,251	24.7
Refined mineral oil	586	674	1,391	1,927	1,063	21.0
Base metals	334	365	553	947	436	8.6
Vegetable oil	295	179	202	395	200	3.9
Electrical machinery	174	179	348	466	186	3.7
Synthetic fabric	150	143	208	254	183	3.6
Plastic	167	158	247	312	174	3.4
Pharmaceutical products	125	146	181	218	156	3.1
Cement	27	57	140	150	84	1.7
Paper products	72	58	70	98	62	1.2
Rubber manufactures	47	64	61	79	49	1.0
Dairy	46	52	55	79	47	0.9
Chemical products	33	45	49	59	58	1.1
Scientific instrument	34	27	49	64	36	0.7
Woven fabric	30	38	51	34	19	0.4
Tobacco	15	1	1	26	13	0.3
Fertilizers	2	11	15	20	10	0.2
Spices & Taste Powder	1	2	2	2	10	0.2
Cotton fabric	34	26	24	15	7	0.1
Dye compound	8	10	12	13	7	0.1
Garment	4	3	14	8	5	0.1
Coal & coke	2	1	6	6	4	0.1
Wheat flour	*	0	*	0	1	0.0
Crude oil	-	*	-	*	*	*
Others	1,050	1,047	1,525	2,035	1,008	19.9
Total	4,543	4,181	6,413	9,035	5,068	100.0

Source: CSO, Selected Monthly Economic Indicators, October 2012.

On imports by commodity in FY2012 (April – October), non-electric and transport equipment (24.7%), refined mineral oil such as diesel (21.0%) and base metals (8.6%) are major imports in recent years, which are thought to be consumed for the growing demands in the domestic construction such as development projects in Naypyitaw. Recent rapid increases in car imports from Japan are due to the deregulation of used car imports came into effect in September 2011. Furthermore, vegetable oil such as palm oil is imported from Malaysia and Indonesia.

Figure 2-34. Trade matrix by country and by commodity (in millions of US dollars)

Imports from Myanmar in 2011

	Total			Gas	Cork/Wood	Vegetable/fruit	Apparel/Clothing	NonMetallic Mineral	Seafood	Metalliferous Ores/scraps	Rubber	Cereals	Footwear	Electric Current	Optical Goods	Oil seeds
Total	**8,043**			**3,075**	**969**	**905**	**845**	**798**	**286**	**248**	**217**	**155**	**102**	**69**	**50**	**42**
				38%	12%	11%	11%	10%	4%	3%	3%	2%	1%	1%	1%	1%
			cumurative	38%	50%	62%	72%	82%	86%	89%	91%	93%	94%	95%	96%	96%
Thailand	**3,268**	41%	41%	3,075	47	16	0	1	61	7	0	0	0	0	5	0
China	**1,680**	21%	62%	0	278	72	7	777	58	229	105	6	1	69	23	13
India	**1,262**	16%	77%	0	590	586	0	0	0	3	3	0	0	0	0	0
Japan	**590**	7%	85%	0	6	25	346	9	67	0	0	0	88	0	2	27
Rep. of Korea	**299**	4%	88%	0	2	30	233	0	2	0	13	7	5	0	0	1
Malaysia	**234**	3%	91%	0	20	39	3	0	40	8	96	9	0	0	0	0
Singapore	**86**	1%	92%	0	13	10	1	3	12	0	0	5	0	0	0	1
Germany	**84**	1%	93%	0	0	0	79	0	0	0	0	0	3	0	0	0
Indonesia	**71**	1%	94%	0	0	45	0	0	1	0	0	21	0	0	0	0
United Kingdom	**66**	1%	95%	0	0	10	35	0	18	0	0	2	0	0	0	0
Pakistan	**63**	1%	96%	0	6	51	0	0	0	0	0	0	0	0	0	0
Côte d'Ivoire	**60**	1%	97%	0	0	0	0	0	0	0	0	59	0	0	0	0
China, Hong Kong SAR	**47**	1%	97%	0	0	0	4	8	13	0	0	1	0	0	19	0
Spain	**43**	1%	98%	0	0	0	43	0	0	0	0	0	0	0	0	0

Exports to Myanmar in 2011

	Total			Road Vehicle	Iron/Steel	Specialized Machinery	Textile Yarn	Petroleum	Manuractures of Metal	Vegetable Fats	General Machinery	Electrical Machinery	Generator	Telecom Equipment	Edible products	Beverages	Non Metallic Minieral	Medicine	Manufactured articles	Plastic	Rubber Manufacture	Other Transport
Total	**12,203**			**1,306**	**1,119**	**1,019**	**930**	**920**	**530**	**492**	**449**	**412**	**355**	**341**	**289**	**285**	**272**	**233**	**232**	**223**	**199**	**189**
				11%	9%	8%	8%	8%	4%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%
			cumurative	11%	20%	28%	36%	43%	48%	52%	55%	59%	62%	65%	67%	69%	71%	73%	75%	77%	79%	80%
China	**4,821**	40%	40%	762	670	352	591	141	221	0	253	178	230	205	25	30	85	26	107	11	88	143
Thailand	**2,846**	23%	63%	183	97	229	150	408	73	47	48	83	10	47	156	244	166	56	58	74	67	3
Singapore	**1,213**	10%	73%	53	12	87	5	289	32	1	65	48	38	58	82	6	6	7	16	70	15	14
Rep. of Korea	**667**	5%	78%	32	144	164	80	2	5	0	12	12	1	6	1	0	1	5	9	34	5	1
Malaysia	**559**	5%	83%	4	19	7	3	20	12	296	14	16	4	2	11	2	5	7	7	21	1	0
Japan	**503**	4%	87%	214	12	113	58	0	20	0	24	6	9	4	0	0	0	1	14	4	2	1
India	**456**	4%	91%	10	154	8	10	2	16	0	8	19	2	3	1	0	1	75	10	1	13	7
Indonesia	**359**	3%	94%	32	1	40	16	1	2	147	3	8	0	0	7	0	5	11	0	7	6	0
Russian Federation	**270**	2%	96%	7	0	1	0	0	143	0	7	6	39	2	0	0	0	0	2	0	0	0
Australia	**67**	1%	96%	0	0	0	1	0	0	0	0	0	0	0	4	0	0	1	0	0	0	0

Source: UN Comtrade.

Figure 2-34 shows Myanmar's trade figure by country and by commodity in 2011 according to UN Comtrade, where we also find a similar trend.

2.3.4 Export and import trend by sector

The figures of exports and imports in an IMF report recently published[22] are close to those of UN Comtrade rather than those of CSO statistics. While the trade balance in FY2011 accounted surplus of 100 million US dollars in CSO statistics, IMF estimated the trade balance as deficit of 10 million US dollars, and the deficits after FY2012 are expected to expand.

The IMF report also provides unique information, that is, exports and imports by sector. Exports by public sectors are over half, approximately 60% of which are natural gas. Imports by private sector account for approximately 70%.

Figure 2-35. Trade balance by sector (in millions of US dollars)

	2007/08	2008/09	2009/10	2010/11	2011/12 Est.
Exports, mainly f.o.b.	6,446	7,241	7,139	8,980	10,170
Public sectors	4,061	4,562	4,105	5,388	5,593
(%)	63	63	58	60	55
Of which: Gas	2,282	2,849	2,480	2,657	3,282
(%)	56	62	60	49	59
Private exports	2,256	2,607	2,963	3,502	4,576
Imports, mainly c.i.f.	5,522	6,938	7,067	8,184	10,180
Private imports	4,031	5,551	4,947	5,892	6,617
(%)	73	80	70	72	65
Trade balance	924	302	72	796	−10

	2012/13 Proj.	2013/14 Proj.	2014/15 Proj.	2015/16 Proj.	2016/17 Proj.	2017/18 Proj.
Exports, mainly f.o.b.	11,308	12,907	15,170	16,475	18,223	20,426
Public sectors	6,101	7,415	8,723	9,556	10,497	11,623
(%)	54	57	58	58	58	57
Of which: Gas	3,538	4,444	5,891	5,754	5,569	5,422
(%)	58	60	68	60	53	47
Private exports	5,207	5,492	6,447	6,920	7,727	8,804
Imports, mainly c.i.f.	12,621	13,984	15,946	17,775	20,305	23,351
Private imports	8,077	9,229	10,843	12,620	14,721	17,279
(%)	64	66	68	71	72	74
Trade balance	−1,313	−1,077	−776	−1,300	−2,082	−2,924

Source: IMF, Myanmar: Staff-Monitored Program, January 2013.

[22] IMF, Myanmar: Staff-Monitored Program, January 2013.

2.3.5 Trade structure

Myanmar trade structure, exporting primary commodities and importing various goods such as consumer and capital goods has not changed much over years. Teak and rice were main export products during the British ruled Burma era. Even during the recent two decades (see the next table) pulses, wood, marine products, precious stones are dominant, and natural gas accounts for approximately 30 to 40% since the beginning of the 21th century.

So far, garment was one of the few goods with contribution to Myanmar's trade structure. Garment exports mainly to the US and EU have seen a big boom from the end of 1990s until the beginning of 2000s, which accounted for 30% of the total exports. Garment exports, however, rapidly decreased due to economic sanctions imposed by several trade partners then. After that, the garment exports had been stagnant, but are recovering in recent years due to exports to Japan and Korea.

Figure 2-36. Top 5 export items (%)

Fiscal year	1990	1995	2000	2003	2004	2005
First	Wood(34)	Pulses(27)	Garment(30)	Gas(25)	Gas(35)	Gas(30)
Second	Pulses(17)	Wood(21)	Pulses(13)	Wood(15)	Wood(13)	Wood(13)
Third	Rice(6)	Marine products (12)	Gas(9)	Garment(14)	Pulses(8)	Pulses(9)
Fourth	Marine products (6)	Rice(9)	Marine products (7)	Pulses(12)	Garment(7)	Garment(8)
Fifth	Precious stones (3)	Garment(6)	Wood(6)	Marine products (7)	Marine products (6)	Precious stones (7)

2006	2007	2008	2009	2010	2011	2012 April-October
Gas(39)	Gas(40)	Gas(35)	Gas(39)	Gas(29)	Gas(38)	Gas(41)
Pulses(12)	Pulses(10)	Pulses(11)	Pulses(12)	Pulses(23)	Pulses(11)	Pulses(10)
Wood(10)	Pulses(10)	Precious stones (10)	Pulses(12)	Pulses(9)	Wood(7)	Garment(7)
Precious stones (7)	Wood(8)	Wood(6)	Wood(7)	Wood(7)	Garment(5)	Wood(7)
Garment(5)	Marine products (5)	Garment(4)	Garment(4)	Garment(4)	Marine products (5)	Marine products (4)

Source: CSO, Statistical Yearbook 2010 and Selected Monthly Economic Indicators.

Okawa and Kohama[23] divide trade structure into several stages.

[1] Exports of traditional products.

[2] Import substitution: Phase 1,

Import substitution of non-durable goods, that is, light industry products

[3] Export substitution: Phase 1,

Exports of light industry products instead of traditional ones

[4] Import substitution: Phase 2,

Import substitution of producer and durable goods, that is, heavy industry products

[5] Export substitution: Phase 2,

Exports of heavy industry products instead of light industry ones

Accordingly, Myanmar can be assessed to be at stage [1] for a long period of time.

2.3.6 ASEAN Economic Community

Myanmar, with Lao, participated in ASEAN in 1997, and is expected to be one of the members of the ASEAN Economic Community after 2015.

The next table shows scopes of ASEAN Economic Community, European Union (EU) and Economic Partnership Agreement (EPA). There are some differences between ASEAN Economic Community and EU, such as common external tariff and opening up government procurement. As for state-owned enterprises, Myanmar will be able to utilize government procurement as buyers of SOEs' products.

Some protest movement against free trade agreement can be seen occasionally by private businesses, and they may have gaining lobbying power against the Parliament.

[23] Okawa K. and H. Kohama, Keizai Hattenron Nihon no Keiken to Hatten Tojyokoku (in Japanese) Toyo Keizai Shimposya, 1993.

Figure 2-37. Comparison of AEC, EU and EPA

	EU	**ASEAN Economic Community**	EPA
The removal of tariffs	○	○	○
The removal of non-tariff barriers	○	○	△
Common external tariff	○	×	×
Mutual recognition arrangements	○	△	△
Free flow of services	○	○	○
Free flow of investment	○	○	○
Free flow of labour	○	△	△
Intellectual property rights	○	○	○
Opening up government procurement	○	×	△
Competition policy	○	△	△
Intraregional cooperation	○	○	○
Common currency	○	×	×

Note: ○ fulfilled, △ insufficient, × not fulfilled or not covered.

Source: Ishikawa, Koichi, "ASEAN Keizai Kyodotai Koso no Kako, Genzai, Mirai", Institute of Asian Studies, Asia University, 10th August 2012.

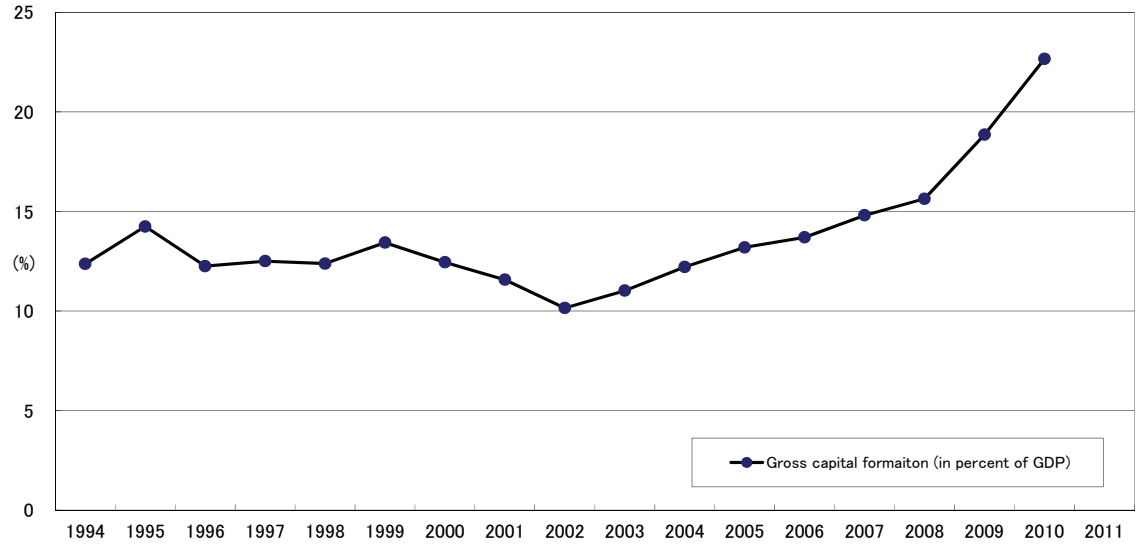
2.4 Investment climate

2.4.1 Capital formation

2.4.1.1 Gross capital formation

Myanmar's investment rates (gross capital formation in percent of GDP) stayed in the range 10 to 15% for a long time, however, they have rapidly been rising since FY2009, to reach 22.7% in FY2010. IMF once provided the figures of public and private investment (see, Figure 2-39).

Figure 2-38. Trend of gross capital formation (in percent of GDP)



Source: ADB, Key Indicators for Asia and the Pacific 2012, August 2012.

Figure 2-39. Composition of gross investment (in percent of GDP)

	1995/96	1996/97	1997/98	1998/99	1999/00
Gross investment	14.2	12.3	12.5	12.4	13.2
Fixed investment	13.7	14.9	13.4	12.9	11.0
Public	6.8	7.2	6.1	4.9	3.7
Private	6.9	7.7	7.3	7.9	7.3

Source: IMF, Myanmar: Statistical Appendix, January 2001.
Original source: Data provided by the Myanmar authorities.

In this study we were not able to obtain items of gross capital formation and gross national saving from relevant government agencies such as the Ministry of National Planning and Economic Development (MNPED), Ministry of Finance and Revenue (MOFR) and Central Bank of Myanmar (CBM)[24].

The recently published IMF report[25] provides the data of public capital expenditures by union government and by state economic enterprises (SEEs). According to it, union government's capital expenditures have been staying in the range of 6 to 8% of GDP, and SEEs' only 1% in recent years.

[24] According to Ministry of National Planning and Economic Development, Myanmar's statistical system is very backward, and on systems of national accounts SNA68 is used even now instead of SNA93. (an interview on 8th November 2012)
[25] IMF, Myanmar: Staff-Monitored Program, January 2013.

Figure 2-40. Composition of gross capital formation (in percent of GDP)

	2007/08	2008/09	2009/10	2010/11	2011/12 Est.
Gross capital formation	14.8	15.9	19.8	25.2	
Gross fixed capital formation	14.5	16.0	19.9	24.9	
Change in inventories	0.3	-0.1	-0.1	0.3	
Public capital expenditures	6.9	5.8	7.5	8.8	7.7
Union government	5.8	4.6	6.2	7.8	6.6
State economic enterprises	1.2	1.2	1.3	1.0	1.0

Source: Gross capital formation: ADB, Key Indicators for Asia and the Pacific 2012, August 2012. Public capital expenditures, nominal GDP: IMF, Myanmar: Staff-Monitored Program, January 2013.

2.4.1.2 Government capital investment

During the course of our study, MNPED provided us with the data of government capital investment (see, figure 2-41)[26].

According to the data, in FY1988 when Myanmar moved from “Burma’s socialist system” to military regime, productive sector accounted for 64.1% of government capital investment, in particular, manufacturing 15.1%. After that the percentages of productive sector have been decreasing, while those of services sector have been increasing, in particular, expenditures to administrative organizations. Since FY2006 expenditures to administrative organizations have been over half of government capital investment, presumably resulting from the construction expenditures of the new capital, Naypyitaw. In FY2009 main items in productive sector (26.5%) are electric power (7.9%), construction (6.7%) and manufacturing (6.2%), however, one of the most significant sectors, agriculture accounted for only 4.9%. Services sector constituted 73.5%, administrative 61.7% followed by transport sector 7.1%.

[26] We received the data on 27th December 2012.

Figure 2-41. Government capital investment by sector (%)

Fiscal year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Productive Sectors	**64.1**	**49.7**	**33.1**	**31.8**	**33.6**	**28.2**	**33.8**	**34.8**	**30.8**	**43.8**	**43.8**	**43.6**	**49.8**	**52.6**	**45.6**	**41.7**	**40.9**	**34.7**	**28.9**	**27.6**	**35.6**	**26.5**
Agriculture	8.9	7.6	5.3	4.3	6.7	7.5	11.1	16.7	10.9	11.6	13.6	12.1	21.5	10.2	10.6	8.5	6.9	7.8	5.6	5.3	8.2	4.9
Livestock and Fishery	2.6	1.2	1.0	1.3	1.0	0.5	0.2	0.3	0.4	0.2	0.3	0.1	0.2	0.3	0.3	0.5	0.4	0.3	0.3	0.2	0.1	0.2
Forestry	4.0	3.3	1.9	1.1	1.4	1.3	0.7	0.8	1.0	0.9	0.8	1.0	0.9	0.8	0.6	0.4	0.3	0.2	0.2	0.2	0.4	0.3
Energy	4.8	2.0	0.7	0.6	0.5	0.3	0.5	**	0.4	0.4	0.6	0.7	1.5	1.2	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.3
Mining	7.8	4.8	1.1	0.8	0.7	0.9	0.3	0.3	0.2	0.1	**	**	0.1	0.1	0.1	0.1	0.1	0.1	**	**	**	**
Processing and Manufacturing	15.1	10.7	6.1	3.9	4.9	2.3	1.2	1.3	1.9	4.0	8.9	7.5	9.0	11.4	14.3	12.8	12.5	6.5	6.3	7.0	8.8	6.2
Electric Power	11.0	9.8	6.9	4.5	5.0	3.7	3.7	3.3	4.1	6.1	3.9	4.2	2.8	4.3	4.3	4.5	7.5	8.0	8.6	9.6	12.9	7.9
Construction	9.9	10.3	10.1	15.3	13.4	11.7	16.1	12.1	11.9	20.5	15.7	18.0	13.8	24.3	15.3	14.8	13.1	11.7	7.6	5.1	4.9	6.7
Services	**33.8**	**46.8**	**64.2**	**64.1**	**62.6**	**69.2**	**63.9**	**63.2**	**68.0**	**55.3**	**55.6**	**55.9**	**49.7**	**46.6**	**53.7**	**58.1**	**58.7**	**65.1**	**70.9**	**72.3**	**64.4**	**73.5**
Transport	12.7	11.8	8.3	8.6	8.0	9.5	11.0	13.5	15.5	14.7	13.8	11.3	5.5	9.6	12.2	12.6	11.9	16.6	7.3	6.7	6.3	7.1
Communications	2.4	1.3	3.8	1.5	1.5	1.6	1.5	1.9	1.9	1.9	1.6	1.1	1.1	1.3	1.6	1.1	2.5	1.1	1.4	2.3	1.9	1.5
Social Services	7.9	8.8	21.0	24.7	22.1	13.8	11.3	11.7	16.9	12.4	7.7	9.2	13.1	12.3	20.3	12.2	12.9	4.6	5.0	4.2	3.6	3.1
Financial Institutions	0.6	0.6	1.5	1.3	1.6	1.8	1.8	1.1	0.5	0.7	0.3	0.3	0.5	0.5	0.5	0.2	0.3	0.3	0.2	0.1	0.1	0.1
Administrative Organizations*	7.6	14.5	22.2	20.8	29.4	42.5	38.3	35.0	33.2	25.6	32.2	34.0	29.5	22.9	19.1	32.0	31.1	42.5	57.0	59.0	52.5	61.7
Municipalities	2.6	9.8	7.4	7.2	-	-	-	-														
Trade	**2.1**	**3.5**	**2.7**	**4.1**	**3.8**	**2.6**	**2.3**	**2.0**	**1.2**	**0.9**	**0.6**	**0.5**	**0.5**	**0.8**	**0.7**	**0.2**	**0.4**	**0.2**	**0.2**	**0.1**	******	******
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Data provided by Ministry of National Planning and Economic Development (MNPED)

2.4.2 Foreign direct investment

2.4.2.1 Trend of foreign direct investment

Figure 2-42 describes the trend of foreign direct investment (FDI) in Myanmar. We need to carefully examine FDI statistics with caution because statistics based on approved capital base significantly differs with that based on implemented capital base year after year. The analysis below is based on approved capital statistics, because it provides more detail of FDI.

Figure 2-42. Trend of FDI

(in millions of US dollars)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13 April-October
Approved capital (1)	205.7	984.8	329.6	19,999.0	4,644.5	411.9
Implemented capital (2)	715	976	963	969	2,863	
GDP at current prices	20,182	31,367	35,225	45,380	51,925	

Source: (1) CSO, Statistical Yearbook 2010 & Selected Monthly Economic Indicators, October 2012.

(2) IMF, Myanmar: 2011 Article IV Consultation, May 2012. The figure of 2011/12 is estimated one.

2.4.2.2 Foreign Investment Law

Restrictions and investment incentives for foreign investors in Myanmar are to comply with the Foreign Investment Law (1988), which was recently newly ammended on November 2012. The new law has strengthened the role of Myanmar Investment Commission (MIC) and some restrictions were relaxed while new requirements were introduced as follows.

In addition, the bylaws to this new law was officially released by the Directorate of Investment and Company Administration (DICA) in 31 January 2013 which prescribes certain provisions and benefits on the part of the investors in detail. The by-law consists of two notices from MIC and MNPED. The MIC notice stipulates the restricted areas and conditions for investments by the foreign companies (investors) whereas latter notice detailing fields of investments in which local companies (investors) are solely permitted under the forth chapter of the new law.

As to the relevance of concerned SOEs under this project, there is no specific restrictions against any future foreign investment and partnership through JV or capital injection given the conditions prescribed in the new law subject to permission by the MIC and approval by the government (i.e. MOI).

Figure 2-43. Some Changes in Foreign Investment Law

	Old Foreign Investment Law	New Foreign Investment Law
Minimum capital	Manufacturing: USD500,000 Services: USD300,000	Subject to review by Myanmar Investment Commission (MIC) and approval by the government
100% Foreign capital	Permitted	Permitted to certain areas set by the MIC
Joint Venture	At least 35% of foreign capital	No specific share requirement
Land lease preiod	Maximum 40 years: initial 30 years + extendable 5 years for two periods	Maximum 70 years: initial 50 years + extendable 10 years for two periods
Tax holiday	3 years	5 years
Employment requirements	None	At least 25% share of local employees after 2 years of company establishment. Then, at least 50% and 75% after 4 years and 6 years since establishment respectively.

Source: JETRO "Procedures for Company Establishment by Foreign Companies", DICA

2.4.2.3 FDI by sector and by country

FDI (approved capital base) in FY2011 was 4,644.5 million US dollars, decreased by 76.8% compared with that in FY2010 which bloated sixty-fold from the year before.

Looking at the FDI trend by sector in FY2011, power sector received 4,343.98 million US dollars, while oil and gas sector 247.70 million US dollars. Both sectors accounted for 98.9% of the total FDI, by contrast, manufacturing sector received 32.25 million US dollars, accounted for only 0.7% of the total FDI.

Next, looking at FDI trend by country, investment from China led by 4,345.73 million US dollars, which accounted for 93.6 % of the total FDI, followed by UK 99.83 million US dollars, India 73.00 million US dollars and Malaysia 51.86 million US dollars. FDI from Japan totalled only 4.32 million US dollars.

FDI in FY2012 (April – October) stays stagnant with 411.86 million US dollars. Investment in power sector is 193.78 million US dollars (47.0%) and that in oil and gas sector 118.90 million US dollars (28.9%), so both sectors are dominant, however, investment in manufacturing sector reached 88.53 million US dollars (21.5%). By country, China carried out investment of 197.63 million US dollars and Hong Kong 63.75 million US dollars, both country accounted for 63.5% of the total FDI, followed by Singapore 49.22 million US dollars (11.9%), Korea 27.79 million US dollars (6.7%) and so on.

Figure 2-44. FDI by sector (approved capital)

(in millions of US dollars, %)

	2007/08	200/09	2009/10	2010/11	2011/12	2012/13 April-October	(%)
Agriculture				138.8		9.7	2.3
Construction							
Fihseries	12.0						
Mining	5.0	856.0	2.5	1,396.1	19.9		
Oil and Gas	170.0	114.0	278.6	10,179.3	247.7	118.9	28.9
Manufacturing	18.7		6.0	65.3	32.3	88.5	21.5
Transport					0.6		
Hotel and Tourism		15.0	15.3				
Real Estate Development							
Industrial Estate		-0.2	27.2				
Power				8,218.5	4,344.0	193.8	47.0
others						1.0	0.2
Total	205.7	984.8	329.6	19,998.0	4,644.5	411.9	100.0

Source: CSO, Statistical Yearbook 2010 and Selected Monthly Economic Indicators, October 2012.

Figure 2-45. FDI by country (approved capital)

(in millions of US dollars, %)

	2007/08	200/09	2009/10	2010/11	2011/12	2012/13 April-October	(%)
Canada						1.0	0.2
China		856.0	2.5	8,269.2	4,345.7	197.6	48.0
Germany[	2.5						
Hong Kong			6.0	5,798.3		63.8	15.5
India	137.0				73.0	11.5	2.8
Japan		3.8		7.1	4.3	9.2	2.2
Korea	12.0	-4.0		2,676.4	25.6	27.8	6.7
Malaysia			237.6	76.8	51.9	4.3	1.0
Panama					26.0		
Russia		94.0					
Singapore	38.0		27.2	226.2		49.2	11.9
Thailand	16.2	15.0	15.3	2,146.0			
UAE			41.0				
United Kingdom				799.0	99.8	39.4	9.6
Vietnam		20.0			18.1	8.0	1.9
Total	205.7	984.8	329.6	19,998.0	4,644.5	411.9	100.0

Source: CSO, Statistical Yearbook 2010 and Selected Monthly Economic Indicators, October 2012.

2.4.2.4 FDI by form of organization

FDI trend by form of organization, production sharing basis and joint venture are the common form and then followed by wholly foreign-owned company. While production sharing basis is the most common form of investment of resource development amongst foreign companies especially in resource-rich countries, Myanmar is no exception for oil and gas development. Interesting to note, local counterparts for JV projects are mostly State Economic Enterprises.

Figure 2-46. Foreign direct investment permitted by form of organization under the foreign investment law

(in millions of US dollars)

	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Cumulative Total
Wholly Foreign-owned	4.3	15.7			19.5	14.8	51.0	2,725.7
Joint Venture	32.6		6,030.0	281.2	16.2			9,203.1
State Economic Enterprises	30.0		6,030.0	281.2	16.2			8,330.5
Private Enterprises	2.6							480.1
Others								392.5
Production Sharing Basis	54.3	142.6	35.7	438.5	170.0	970.0	278.6	4,126.8
Total	91.2	158.3	6,065.7	719.7	205.7	984.8	329.6	16,055.6

Note: Cumulative total: from FY1988 to FY2009.

Source: CSO, Statistical Yearbook 2010.

2.4.2.5 Foreign companies investing in Myanmar

Regarding foreign companies investing in Myanmar, as mentioned above, FDI flows into Myanmar is centered at oil and gas sectors as well as power sectors. For the oil and gas sector, Chevron (US), Total (France), Daewoo and Korea Gas Corporation (Korea), Petronas (Malaysia), PTTEP (Thailand), CNOOC, CNPC and Sinopec (China), ONGC (India) etc. are conducting the development and production of natural gas[27]. For the power sector, China has played a dominant role[28] where China Huaneng Group, China Datang Corporation and China Power Investment Corporation are operating business in this sector.

2.4.3 Special Economic Zone (SEZ)

2.4.3.1 Special Economic Zone Law

The present special economic zone (SEZ) law was enacted in January 2011; however, based on the interviews with relevant ministries, the law is currently under review for revision in the near feature.

The brief summary of the current active law is as follows:

Kind of business in Special Economic Zones (Article 6)	(a) production based businesses such as goods processing business, hi-tech production business, industries, agriculture, livestock breeding and fishery, mineral produce business and forestry produce business; (b) services business such as trading, logistics and transportation, storage, hotel and tourism, education and health, residential quarters, infrastructure supply and

[27] Sakamoto, S., "Myanmar: Minshuka・Keizai Kaiho Seisaku ni Tenjita Myanmar Sekyu Gasu Kaihatsu no Tenbo" (in Japanese), Japan Oil, Gas and Metals National Corporation, 2012, etc.

[28] Suehiro, A., "Chugoku no Taigai Bocho to Tonan Ajia" (in Japanese), Institute of Developing Economies, 2011.

	support centers, green areas which conserves and protects the natural environment, recreating and resort centres; (c) infrastructure construction businesses such as road, bridge, airport, port, electricity, communication and water supply environment conservation and protection, and wastes control; (d) other businesses determined by the Central Body, with the approval of the Government.
Income tax exemption (Article 17)	The investor who invests and operates business in the Special Economic Zone: (a) may apply for income tax exemption on the proceeds of overseas sale for the first five years from the day of commencement of the production or service; (b) may apply for fifty percent relief on the income tax rate stipulated under existing Law for the second five years on the overseas sale proceeds; (c) for the third five years, if the profit obtained from export sale is re-invested, may apply for fifty percent relief on the income tax rate stipulated under existing Law on such invested profit;
Exemption from customs duty and other revenues (Article 24)	The investor may be allowed to: (a) import raw materials, machineries, equipment from foreign country which are imported for export-oriented processing enterprises established in Export Processing Zone, with exemption from customs duty and other revenues; (b) import, with stipulations, machineries and motor vehicles from foreign countries which are to be used in investment enterprises with exemption from customs duty and other revenues, for five years commencing from the year of operation, and relief of fifty percent of customs duty and other revenues for the next five consecutive years; (c) except Export Processing Zone, other zones in Special Economic Zone have the right of exemption and relief of tax and revenue in respect of the importation of materials related to investment business from local and foreign countries, in accord with the existing Law.
Land lease and land use (Article 35)	The Central Body: (a) shall may, with the approval of the Government, permit the developer or investor land lease or land use after causing payment of fees to be made for land lease or land use, for at least 30 years; (b) if desirous to continue to operate after the expiry of the permitted term under subsection (a), may extend consecutive term of 30 years for large-scale investment

	enterprise and further 15 years of extension after the expiry of the said term; (c) if desirous to continue to operate after the expiry of the permitted term under subsection (a), may extend consecutive term of 15 years for medium-scale investment enterprise and further 15 years of extension after the expiry of the said term; (d) if desirous to continue to operate after the expiry of the permitted term under subsection (a), may extend two times of consecutive term of five years for small-scale investment enterprises.

Source: Excerpt from "The Myanmar Special Economic Zone Law"2011.

2.4.3.2 Existing SEZs

At present, there are three SEZs planned at different sites in Myanmar, that is, Dawei, Kyaukpyu and Thilawa. All sites have a plan that the government will transform existing sea ports[29] into deep-water ports and construct SEZs in the nearby vicinity of those ports. Every site seemed to have gained supports from different countries with its geopolitical interests respectively.

[29] Each port is controlled by Myanmar Port Authority under Ministry of Transportation.

Location of SEZ, planned SEZ sites and large cities

Source: Trade and Economic Cooperation Bureau, METI, "Myanmar Keizai Jyousei to Nichi-Myanmar Keizai Kyouryoku Kankei", 21st September 2012.

(1) Dawei

Dawei is located in the south-east area, Tanintharyi Division, which is designated as Myanmar's first SEZ. Thai contractor, Italian-Thai Development, has been granted the right to use the area. If Dawei is connected to Southern Economic Corridor through Ho Chi Minh City in Vietnam, Phnom Penh in Cambodia and Bangkok in Thailand, the corridor is expected to become a commercial artery linking Indochina to the India Ocean. The development of Dawei has been reported recently that the development projects are behind the initial plan.

Thai National Economic and Social Development Board (NESCB) recently released its projection[30] (see figure 2-47). The new cost is estimated 325 billion Thai baht up from 200 billion baht originally projected.

Figure 2-47. Projected investment cost of the Dawei project

(millions baht)

	First phase (2015)	Second phase (2020)	Total
Total investment amount in Myanmar (deep-water port, road link, railways, etc.)	148,700	100,000	248,700
Total investment amount in Thailand (motorway, railways, etc.)	55,989	20,300	76,289
Total investment amount	204,689	120,300	324,989

Source: Dawei Development Company Limited, website.

(2) Kyaukpyu

Kyaukpyu is located in the western part of Myanmar, in Rakhine State. Oil and gas pipelines from Port Kyaukpyu to Yunnan Province of China are under construction. The pipelines are to carry natural gas produced in the coast of Rakhine State, and crude oil produced in the Middle East and Africa to China without passing through the Straits of Malacca[31]. The government, under China's initiative, has a plan to establish an SEZ in the hinterland of the port, however, the development is said to have not progressed yet.

(3) Thilawa

Thilawa Port is located in 25 kilometers southeast of Yangon City. The government, in corporation with Japan, has a plan to develop an SEZ in the vicinity of the port, which has an area of 2,400 hectares adjacent to Greater Yangon.

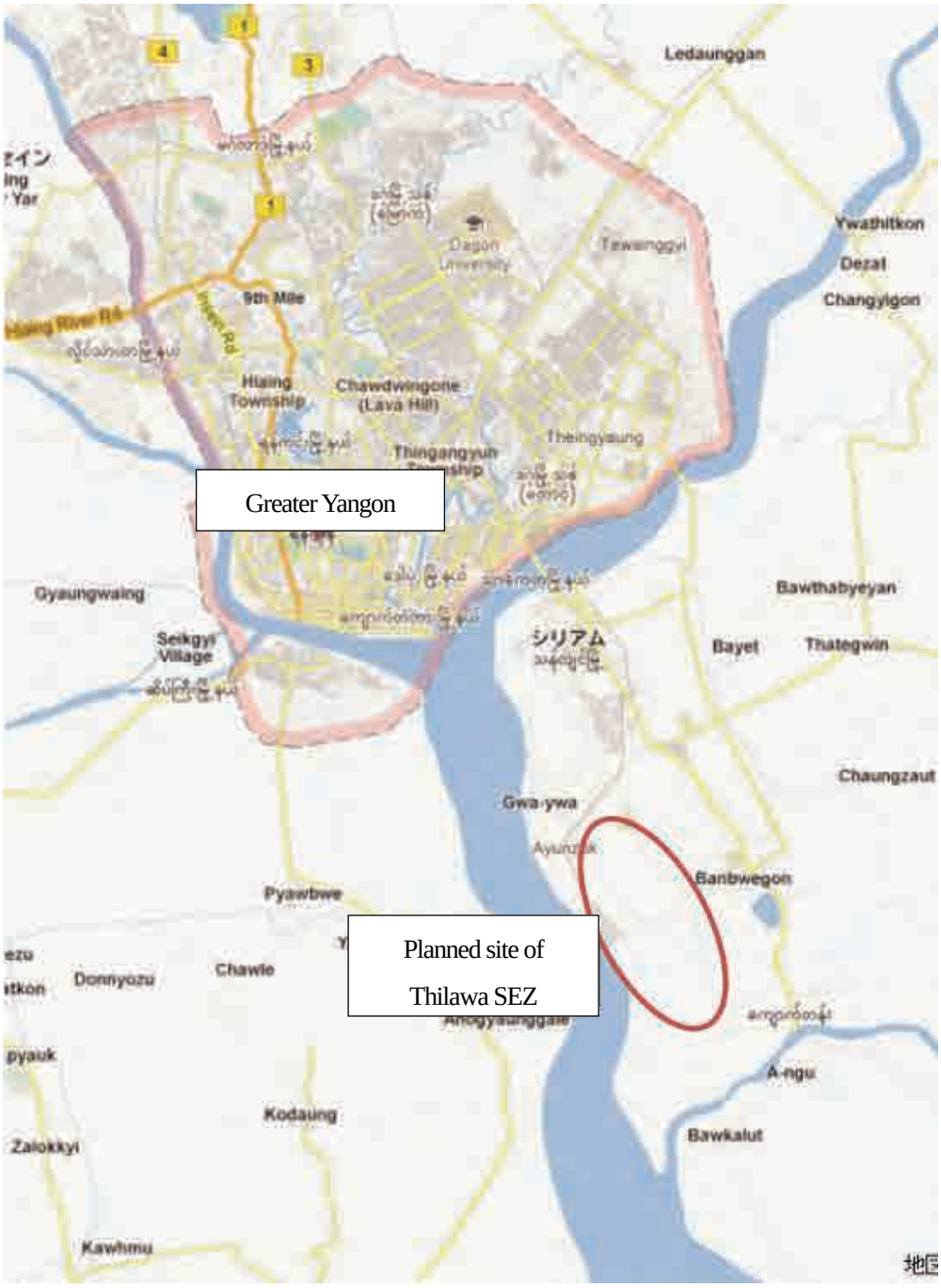
The background and planned schedule for Thilawa SEZ development are as follows:

[30] The testimony by Charnwit Amatamatuchart, deputy secretary-general of the NESDB to the House committee on economic development on 9th January 2013.

[31] In China, approximately 80% of oil imports are carried passing through the straits of Malacca. This security dilemma is called "Malacca Dilemma".

November 2011:	Meeting between Japanese Prime Minister and Myanmar President. Meeting between Japanese Minister of Economy, Trade and Industry and Myanmar Minister of Ministry of National Planning and Economic Development.
January 2012:	Ministerial Dialogue on Japan - Myanmar Economic and Industrial Cooperation.
April 2012:	Japan - Myanmar Summit Meeting. Memorandum of Intent on the Cooperation for the Development of the Master Plan for the Thilawa.
April 2012－:	Feasibility study for investment by private companies (Mitsubishi Corporation, Marubeni Corporation and Sumitomo Corporation). Feasibility study for infrastructure such as electricity, water supply and sewerage systems etc. by JICA.
December 2012	Memorandum on the Cooperation for the Development of the Thilawa Special Economic Zone.
2013－:	Establishing a joint venture as a zone-developer. (planned) Developing infrastructure for Thilawa SEZ with Japan's ODA. (planned)
2015－:	Commencement of the commercial operation at Thilawa SEZ. (planned)

Location of Thilawa Special Economic Zone



Source: JICA, "The Project for Development of Infrastructure for Thilawa Special Economic Zone" (in Japanese), 27th April 2012.

3. Policies, laws and regulations on SOEs

3.1 Laws and regulations on SOEs

State-owned Economic Enterprises (SOEs / SEEs) are not corporate bodies established under "Corporate Act" or "Special Corporate Act," but they are legally part of the government. Recently, some SOEs under Ministry of Transport started running operations independent of the government, although none of SOEs under Ministry of Industry (MOI) have started such independent operations yet. Such SOEs under the control of the government can be regarded as production units of the government, rather than independent companies.

The following section reviews a legal background of SOEs in general.

3.1.1 Legal background of SOEs

The legal standpoint of SOEs is the State-owned Economic Enterprises Law (The State Law and Order Restoration Council Law No.9/89) or SEE Law. As mentioned above, SOEs are not corporate bodies under Company Act or Special Company Act.

The SEE Law defines 12 economic activities in which private investment is restricted and reserved to be carried out solely by the government. The 12 economic activities, which are specified in Section 3 of the law, are as follows:

(a) Extraction of teak and sale of the same in the country and abroad;
(b) Cultivation and conservation of forest plantation with the exception of village owned firewood plantation cultivated by the villagers for their personal use;
(c) Exploration, extraction and sale of petroleum and natural gas and production of products of the same;
(d) Exploration and extraction of pearl, jade and precious stones and export of the same;
(e) Breeding and production of fish and prawn in fisheries which have been reserved for research by the Government;
(f) Postal and Telecommunications Service;
(g) Air Transport Service and Railway Transport Service;
(h) Banking Service and Insurance Service;
(i) Broadcasting Service and Television Service;
(j) Exploration and extraction of metals and export of the same;
(k) Electricity Generating Services other than those permitted by law to private and cooperative electricity generating services;
(l) Manufacture of products relating to security and defense which the Government has, from time to time, prescribed by notification.

Section 6 of the law mentions "Any person shall have the right to carry out any economic enterprise other than those prescribed under Section 3 to be carried out solely by the Government." Therefore, the areas in which state-owned enterprises can participate are basically limited to those mentioned above.

However, Section 7 stipulates "Without prejudice to the provision of Section 6, the Government may, in addition to those economic enterprises which are prescribed under Section 3 to be carried out solely by the Government, also carry out any other economic enterprise if it is considered necessary in the interest of the Union of Myanmar." Based on this section, SOEs can run business in any areas which are not mentioned in Section 3.

SOEs under MOI produce vehicles, heavy machineries, agricultural machineries (No.(1) Heavy Industries Enterprise), manufacturing machineries, generators, turbines, transmission lines, tires, oxygen (No.(2) Heavy Industries Enterprise), cement, bricks, ceramics, glass, mirrors (No.(3) Heavy Industries Enterprise), pharmaceutical goods, foodstuffs (Pharmaceutical and Foodstuff Industry), papers, hydrogen peroxide, bicycle (Paper and Home Utilities Industry), yarns and clothes (Textile Industry), which are not included in Section 3 of SEE Law.

SEE Law is composed of six chapters and 12 sections, as follows:

Chapter I Title and Definition (Section 1-2)
Chapter II Economic Enterprises to be carried out Solely by the Government (Section 3-5)
Chapter III Right of carrying out other Economic Enterprises (Section 6-7)
Chapter IV Right to form Organizations (Section 8-8A)
Chapter V Offences and Penalties (Section 9-10)
Chapter VI Miscellaneous(Section 11-12)

SOEs do not have to obtain business permits or company registrations issued by Ministry of National Planning and Economic Development (MNPED) which are necessary for private companies in general[32].

The legal background of the establishment of individual SOE is a notification[33]. Such notifications are issued upon the approval by the cabinet[34].

[32] Source: Interviews with MOI (December 2012)
[33] Source: Interviews with Union Attorney General's Office (November 2012)
[34] Source: Interviews with MOI (December 2012)

3.1.2 Regulations on the organizational structures of SOEs

SEE Law does not have any sections which regulate organizational structures or management of SOEs. Articles on organizational structure or management of Company Act do not apply to SOEs. For example, shareholder's meetings that are stipulated in Company Act are not organized in SOEs[35]. The government designs the organization and management structure of a SOE individually based on Section 8 of SEE Law.

Section 8

(a) In order to carry out the economic enterprises mentioned in Section 3 and Section 7 ,the Government may, by notification
  (i) Constitute organizations which are to undertake responsibility and prescribe their duties and powers;
  (ii) Reconstitute, if necessary, such organizations which are in existence at the time of the commencement of this Law, amend and prescribe their duties and powers;
  (iii) Constitute one or more bodies to supervise the organizations mentioned in sub –sections (1) and (2), if necessary, and prescribe their duties and powers.

(b) The respective organizations constituted under sub – section (a) shall be a body corporate having perpetual succession and a common seal, and shall have the right to sue and be sued in its corporate name.

According to MOI, the organization and management structure of a SOE in MOI is drafted by the executive committee of MOI, submitted to Ministry of National Planning and Economic Development, and approved by the cabinet.

When SOEs form joint ventures (JVs) with private companies or foreign investors, the JV company is regarded as a "special company" as specified in Special Company Act (1950). The organization and management structure of a special company is regulated by Company Act (1913), if bylaws does not separately specify. Note that the organization and management structure of foreign companies, whose legal standpoint is Company Act, are regulated by Company Act.

In summary, regulations on the organization and management structure are quite different from those on private companies. Because there is no regulation which regulates the organization and management structure of SOEs, they are designed individually by ministries in charge, based on the authorizations of the cabinet and parliament.

[35] Source: Interviews with MOI (November 2012)

3.1.3 Investment permits for SOEs

When companies and special companies carry out capital investment in equipment or plants, they can obtain investment permits by Myanmar Investment Commission (MIC) to receive investment incentives. They also need recommendations or no objection letters from ministries in charge.

Joint venture companies of SOEs and foreign investors, which are regarded as special companies, can also receive investment incentives by obtaining investment permits by MIC. When applying for investment permits, special companies submit application to ministries in charge, which are then sent to MIC.

SOEs, in contrast, have to obtain approval of Ministry of National Planning and Economic Development and Ministry of Finance and Revenue, and also the approval of the parliament, when carrying out capital investment[36], while MIC is not involved in investment approval. Approvals on investments by SOEs are for the purpose of budget allocation, and not obtaining investment incentives.

Legal backgrounds, regulations on organization, business permits and investment permits are summarized as follows:

Figure 3-1. Summary of regulatory framework and permissions

	Established based on	Regulations on Organization	Business permits	Investment permits
Company (Private) - Domestic companies - Foreign companies	Company Act	Company Act	Necessary	By MIC (not compulsory)
Special Company - JV of SOEs and domestic / foreign investors	Special Company Act	Company Act	Necessary	By MIC (not compulsory)
SOEs	SEE Law	Notifications	Not necessary	By MNPED, MOFR, Parliament (Compulsory)

3.2 Background of SOEs under Ministry of Industry

Vision of Ministry of Industry is "to produce a variety of machinery and equipment both qualitatively and quantitatively to satisfy the needs of the industrial sector," and this would be the purpose that MOI established SOEs. Although mission and strategy of MOI were significantly revised in 2012, the vision itself was not revised.

The mission of MOI before 2012 is "to produce a variety of machinery & equipment both qualitatively and quantitatively to satisfy the needs of the industrial sector," while the mission after 2012 is "to develop an updated

[36] Source: Interviews with MOI (November 2012)

and modernized system of agricultural-based production, services and industrial sector" and "to open up employment opportunities for the people at small and medium enterprises." As can be seen from the missions before 2012 and after 2012, it can be confirmed that MOI is shifting its role as a "Player" or a producer of industrial goods to a role as "Regulator" or "Promoter" of industrialization, which sets up industrial policies or regulations.

Figure 3-2. Mission and Vision of MOI before 2012

Mission

- To produce a variety of machinery & equipment both qualitatively and quantitatively to satisfy the needs of the industrial sector

Vision

- To play a vital role in transforming the nation into a new modern developed industrialized country

Strategies

- Maximize the production capacities in the existing industries
- Produce machineries, equipment, spare parts etc., for industrial and public use
- Establish new industries for utilization of natural resources & human resources
- By research & development, for the production new materials and machinery spare part as import substitution

Objective

- Creation of technical-trained manpower around the nation
- Creation of job opportunities for youth to take up industrial employment
- Adoption of production technology and quality control techniques at factories
- Mass production of qualified machine tools for the development of the industrial sector
- Production & distribution of Tools, Die, Jig & Fixtures for the optimum production at state-owned & private-owned factories
- Production of more value-added products utilizing the basic raw materials in the country for uplifting social, economic and promoting green & state-of-art technologies
- Intensification of research & development activities for the establishment of competent design and to improve innovative approach for future products

Source: Ministry of Industry homepage

From 1962 to 1988, the government placed emphasis on enhancing import substituting industries, especially through SOEs, using the foreign exchange gained from exports of rice and wood (teak). The SOEs under MOI, which are also considered to be established for this purpose, supplied products and encouraged consumption in the domestic markets.

Note that the notifications, which were issued upon the establishment of SOEs under Ministry of Industry, were not published. Thus, it was not possible to confirm the legal background and purposes of the establishment of the SOEs.

SOEs under MOI recently established several factories and carried out new capital investment on equipment in the 2000's. For example, new production lines for vehicles designed by Chinese companies or weaving machines were installed in state-owned factories. Such capital investments seem to have been done by the military government during the economic sanction period in order to increase domestic production of industrial and consumption goods to supply them in the domestic market, using loans from the Chinese government between 2004 and 2009.

However, since 2011, trade barriers have been significantly lifted, and the import amounts increased dramatically. Thus the social significance of SOE products which tried to substitute imported goods has been diminishing. One of such examples is the vehicle production lines at No (12) Factory of No (1) Heavy Industries Enterprise in Htonebo. The production line was installed in late 2000's under the support of China, to produce vehicles designed by a Chinese car producer. However, after it started vehicle production, regulations on the import of foreign cars were lifted in 2010 and 2011, and the number of imported second-hand cars significantly increased since then. The cars produced by the state-owned factories then faced fierce competitions with imported used cars.

Currently, the government priority seems to be a promotion of the private sector, rather than enhancing import substituting industries, as the President, U Thein Sein, made remarks in his speech in March 2012. Accordingly, the mission of MOI was revised in the same directions.

Figure 3-3. Mission and Vision of MOI after 2012

Mission

- To make utmost efforts for the development of an updated and modernized system of agricultural-based production, services and industrial sector with increased momentum as a National Task
- To open up employment opportunities for the people by giving priority to the implementation of small and medium industrial enterprises and proceeding from that stage to the setting up and expansion of heavy industries.

Vision

- To play a vital role in transforming the nation into a new modern developed industrialized country

3.3 Organization structure of SOEs under Ministry of Industry

This section explains relationships between SOEs and MOI from the viewpoints of business management, decision making and personnel management.

3.3.1 The organizational relationship among MOI, SOE and state-owned factories

As mentioned above, SOEs are regarded as part of the government. There are six SOEs under MOI, together with another six directorates. Six SOEs are No. (1) Heavy Industries Enterprise, No. (2) Heavy Industries Enterprise, No. (3) Heavy Industries Enterprise, Pharmaceutical and Foodstuff Industry, Paper and Home Utility Industries, and Textile Industry, while six directors are Directorate of Industry, Directorate of Industrial Planning, Directorate of Industrial Supervision and Inspection, Central Research and Development Center, Small and Medium Enterprises Development Center, and Minister Office.

SOEs under MOI are apparently part of the government, and their management is not independent of the government. As can be seen from the organization chart below, status of the SOEs is the same as other directorates.

Managerial decisions in MOI are basically made by the executive committee, which consists of the Minister of Industry as chairman, and two deputy ministers, five directors general of directorates, the director of Minister Office, and six managing directors of SOEs[37].

Executive committee makes decisions of MOI as a whole and also managerial and operational decisions of SOEs, including procurement, monthly productions, personnel management, and personnel promotions[38].

Decision making process at MOI is as follows:

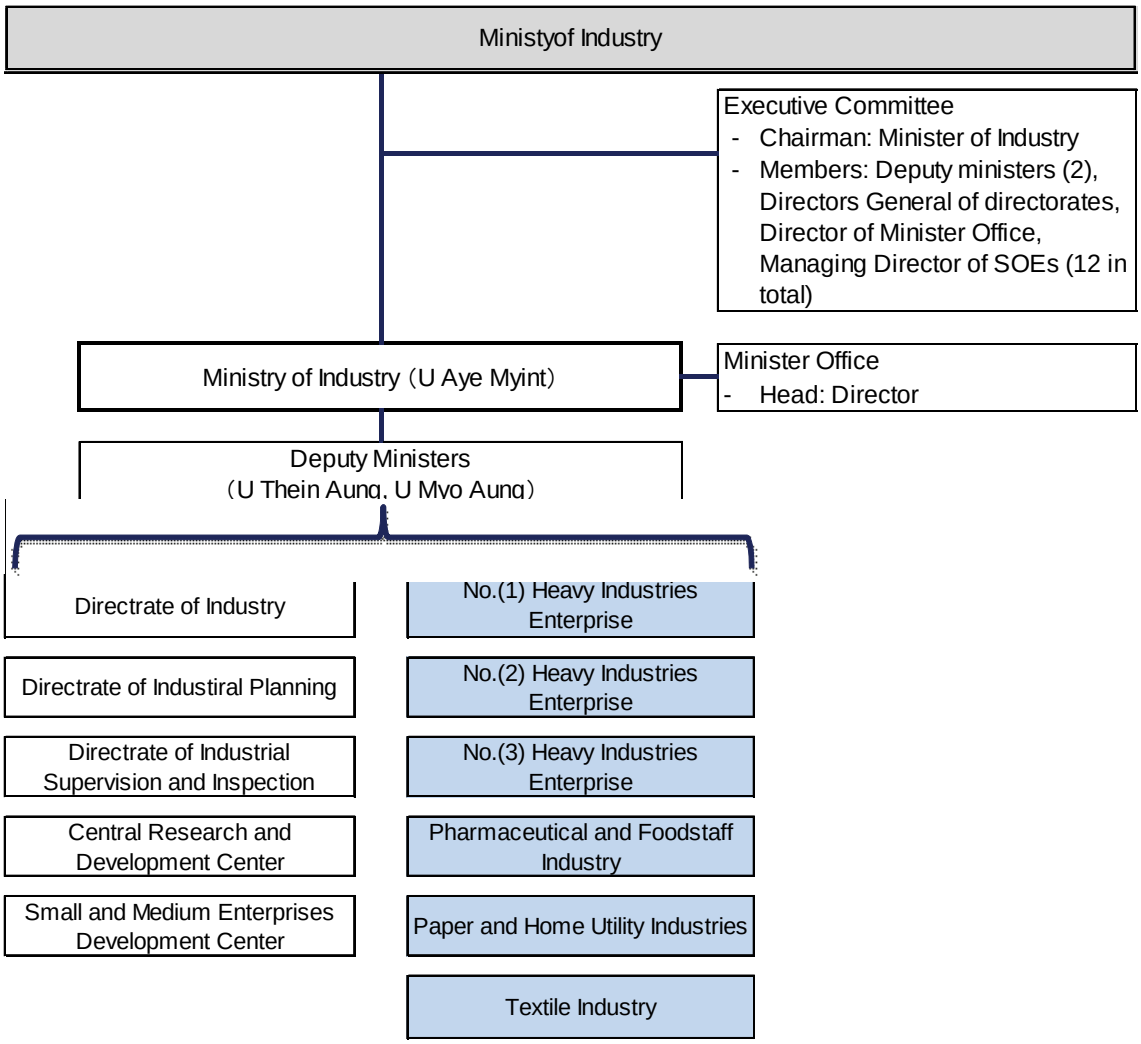
i) Directors general of directorate and managing directors of SOEs send proposals to Minister Office.
ii) Proposals sent to Minister Office are checked by the minister. The minister then gives instructions to directors general and managing directors to submit the proposals to executive committee for approval.
iii) The executive committee (organized once a week) approves on the proposals.

Approvals are made in the name of the executive committee, and not by the minister. However, it is estimated that most of the decisions are made by the minister himself in the executive committee.

As can be seen from above, the management of the SOEs is not independent of the ministry. Suppose MOI is a company, executive committee of MOI is regarded as a board of management that makes managerial decisions. SOEs can be regarded as production units of the company.

[37] A managing director of a SOE is same level with a director general of a directorate. MDs do not have any authorities to make managerial decisions.
[38] Source: Interviews with MOI (December 2012)

Figure 3-4. Organization chart of MOI



Source: MOI homepage and the study team

Division of responsibilities among MOI, SOEs, and state-owned factories are as follows:

Figure 3-5. Divisions of responsibilities among MOI, SOEs, and state-owned factories

Organization	Decision maker	Responsible for
Ministry of Industry	Minister Executive committee	Business management as a whole
State-owned Enterprises	Managing Director	Daily operations of SOEs
State-owned Factories	General Manager	Production management(execution of production plans)

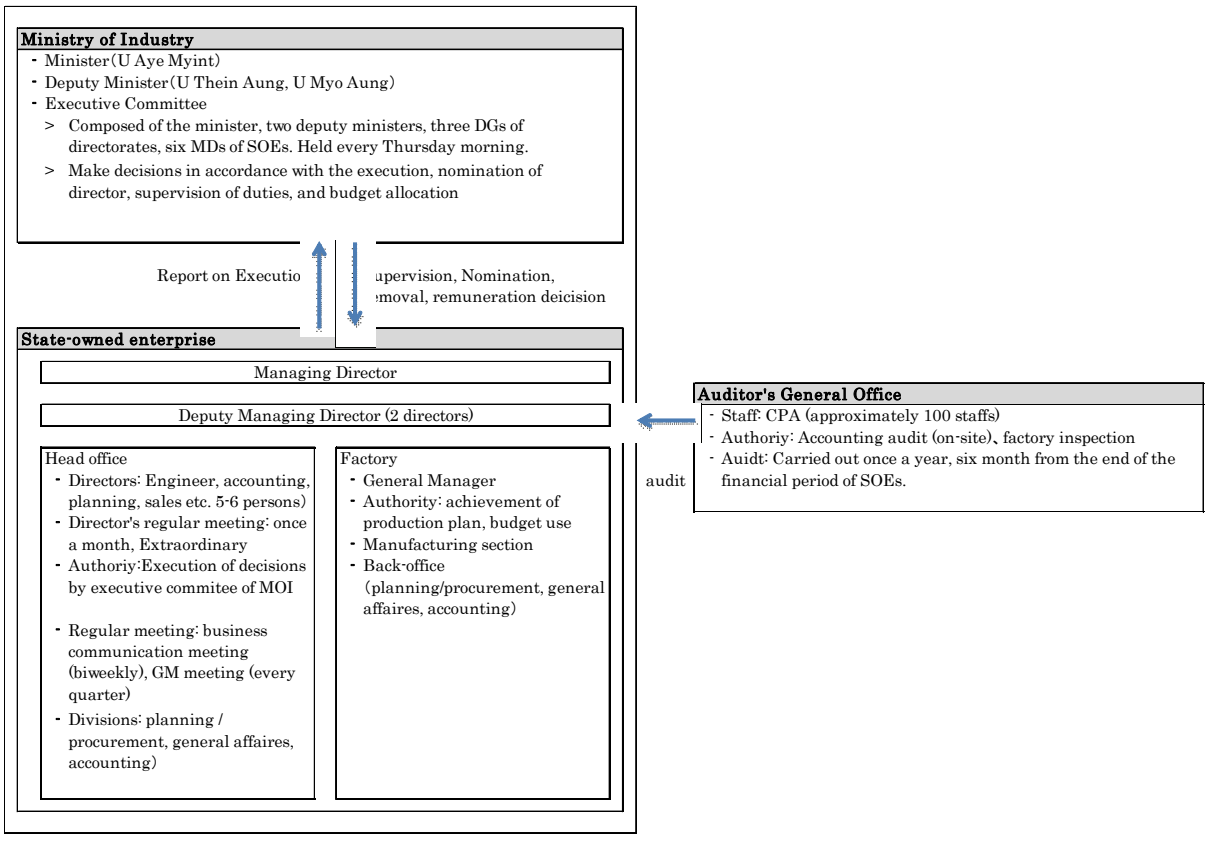
The executive committee makes decisions on a wide range of SOEs' operations, including procurement of goods and selling products based on its management policies.

Headquarters of SOEs, located in MOI buildings in Naypyitaw, carry out daily operations, including financial management and monitoring. As managerial decisions are made by the executive committee, SOEs carry out the daily operations according to the decisions made by the committee.

Factories under SOEs are responsible for productions and are not responsible for financial management, while the headquarters of the SOEs provides instructions on production at factories. Factories do not undertake any marketing activities, as they are under the responsibility of the headquarters.

The cabinet is sometimes involved in making important decisions of SOEs, such as budget allocations to SOEs, capital investments, and disposal of state assets. Auditor's General Office is also involved in the management of SOEs and conducts periodical on-site audits.

Figure 3-6. Managerial structure of SOEs under MOI



3.3.2. The personnel management among MOI, SOE and state-owned factories

MOI, SOEs, and factories have close relationships in personnel management as well. For example, personnel are transferred among factories, SOE headquarters, and directorates in MOI.

Managing Directors of SOEs are assigned by the executive committee of MOI. Only the MOI officials are qualified to be managing directors of SOEs. In addition, all managing staffs of SOEs under MOI are MOI officials at the moment[39].

Staffs of SOEs, including staffs at factories, are all government staffs, to whom the regulations on personnel determined by Union Civil Service Board[40] are applied. Their salary levels are determined based on the salary table, which is applied to the government staffs in all ministries[41].

When recruiting new employees at SOEs and factories, ministries have to obtain approval by Public Service Center[42]. Ministries cannot dismiss employees, no matter if there are excessive employees. When ministries wish to reduce the number of employees, ministries ask them if they would like to leave the government or not, as employees have rights to determine if they stay or leave[43].

3.3.3 Transformation of SOEs to Corporation Units

Recently, several SOEs under Ministry of Transport have changed to "corporation units". Such SOEs are (i) Myanmar Airways (ii) Inland Water Transport (iii) Myanma Shipyard, and (iv) Myanma Port Authority[44]. Civilian managers join them as management staffs to achieve efficient business operations of these SOEs[45].

Corporation units are still legally regarded as SOEs, and they are corporate bodies established based on neither Company Act nor Special Company Act. The legal standpoint of corporation units is Section 8A of SEE Law amended in March 1997, which ensures business operations by funds or employees[46]. Therefore, transformation of SOEs to corporations units does not mean that SOEs are corporatized, but that SOEs become independent of state budgets[47]. Corporation units will not have any state budget allocations.

Corporation units can increase the amount of employee salary and pay bonuses, although they cannot reduce the salary amounts or dismiss employees48. In addition, they can borrow bank loans, as stipulated in the budget

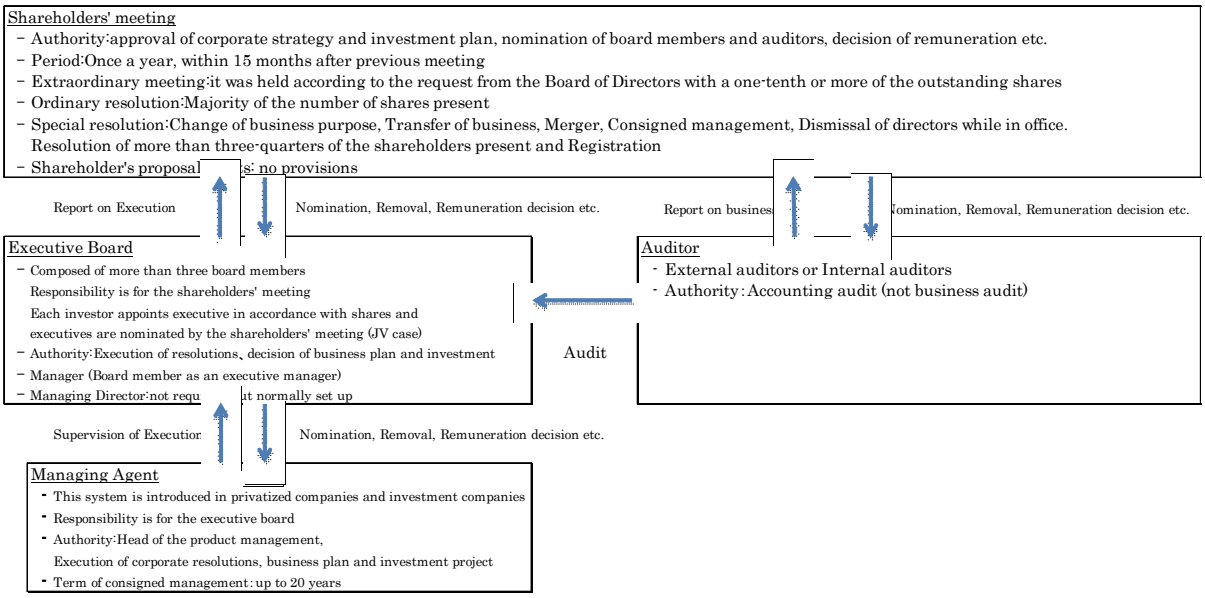
[39] Source: Interviews with MOI (November 2012)
[40] Source: Interviews with MOI (November 2012)
[41] Source: Interviews with No. (1) Heavy Industry Enterprise (November 2012)
[42] Source: Interviews with No. (1) Heavy Industry Enterprise (November 2012)
[43] Source: Interviews with No. (1) Heavy Industry Enterprise (November 2012)
[44] Source: Interviews with Privatization Commission (November 2012) and Union Attorney General's Office (November 2012) Related notifications were not available.
[45] Source: Interviews with Privatization Commission (November 2012)
[46] In the interviews, government officials call this as "Corporatization". However, they are still SOEs, and they are not corporate bodies based on Corporate Act. Therefore, such SOEs should be called as "Corporate units", to differentiate from "Corporatization".
[47] Source: Interviews with Union Attorney General's Office (November 2012)
[48] Source: Interviews with Union Attorney General's Office (November 2012)

law for FY 2012-1349.

The box below shows the organizational structure of the companies established based on Company Act, so that it can be compared with the organizational structure of SOEs. When compared, the functions of the executive committee of MOI are quite similar to those of a board of directors of companies. Beside this, any similarities between the organizational structures of SOEs and companies cannot be found.

Organizational structure based on Company Act

Companies established based on Company Act have to set up a managerial organization. JVs of private companies and SOE, which are regarded as special companies, also have to setup such a managerial organization following Company Act, as specified in Section 3 of Special Company Act.



(Note) A joint venture company with state-owned enterprises and foreign-invested enterprises is established under the special corporation act.
Provisions regarding organization and operation under the act comply with the Corporate Law (The Special Corporation Law, Article 3).
On the other hand, there is no provision regarding managerial structure and operation of SOEs
The managerial structure of SOEs is determined by the notice of the Government under The State-owned Economic Enterprises Law, Article 8 A (a)
However, there is no provision regarding the managerial structure and operation in the State-owned Economic Enterprises Law and it is understood that the structure and operation of SOEs does not comply with the Corporate Law.

(Director General U Kyaw San, Ministry of Justice, explained in an interview on November 09, 2012)

(Source) Related laws and regulations and on-site interview (e.g. MOI, MOJ) by the study team (November, 2012)

[49] Source: Interviews with Privatization Commission (November 2012)

3.4 Financial relationship between SOEs and the government

3.4.1 Financial relationship between state account, state budget and SOEs

3.4.1.1 Overview of the state fund account system until FY 2011-12

Until FY 2011-12, payments and receipts of SOEs are made through State Fund Account (SFA). This means that SOEs cannot make payments or receipts independently.

SOEs received budget allocations for production costs, and make payments for such production cost from SFA[50]. SOEs cannot use the budget allocated for other purposes than paying production costs. Similarly, receipts on sales of SOEs were deposited into SFA, and SOEs could not withdraw the receipts[51].

Eventually, SOEs are allowed to only manufacture products based on the budget allocated and they did not have any responsibility for their losses or profits.

Cash transactions (repayments and receipts) of a SOE were made through a "drawing account" and "deposit account" in Myanmar Economic Bank (MEB). Because the drawing limit is set for the drawing accounts, SOEs cannot withdraw cash from their account more than their budget allocations. At the same time, SOEs cannot withdraw cash from deposit accounts, into which receipts on sales were deposited. The receipts were then transferred to SFA[52].

The gap between the payment by a SOE to SFA and the receipt by a SOE from SFA can be roughly estimated as a gross profit of the SOE. This is because the receipts by a SOE from SFA are for the production costs of a SOE, and the SOE pays the sales receipt to SFA.

Figure 3-7. Receipt from SFA and Payment to SFA by SOEs in MOI

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Receipt from SFA	137,426	177,380	284,601	333,483	388,286	359,070
Payment to SFA	139,468	168,550	274,229	334,289	380,722	368,754
Receipt – Payment	(2,042)	8,829	10,372	(805)	7,565	(9,685)

Source: Statistical Yearbook 2010, Ministry of National Planning and Economic Development

In FY 2009-10, the receipt from SFA by SOEs in MOI was 368,754 million kyats, and this was paid for the production costs and salaries of SOEs in MOI. The payment by SOEs to SFA is 359,070 million kyats in the same fiscal year, and this is the receipts of sales of SOEs.

The table above shows that SOEs in MOI made a profit in FY 2008-09, as the receipts exceeded payments, but made a loss in FY2009-10.

[50] Upon budget formulation, SOEs submit their production plan in March, which are approved and executed from April in the same year.
[51] Source: Interviews with MOI (December 2012)
[52] Source: Interviews with Ministry of Finance and Revenue (December 2012)

Losses of SOEs in MOI are estimated to increase after FY2012-13. This is due to the fact that the "dual exchange rate", which ensured implicit subsidies to SOEs, was abolished in March 2012. For example, a vehicle factory, which imports parts and materials, pays the cost in foreign currency (US Dollar). The costs denominated in US Dollar were converted to the domestic currency at the exchange rate of 5.45 kyats per US Dollar, whose actual exchange rate was 842 kyats per dollar (as of January 2013). Therefore, because of the abolishment of the dual exchange rate, the import costs are converted by the actual exchange rate, and then the total production costs would significantly increase.

3.4.1.2 New account system from FY 2012-13

The SFA system was significantly revised from FY 2012-13, which was then divided into Union Fund Account and Other Account.

From Union Fund Account, which is similar to SFA, payments for salaries, pensions, maintenance costs, some production costs, loan repayments, and interest are made. Such costs are fully covered by the state budget. From Other account, production costs, such as fuel cost and material cost are paid. At the same time, receipts on sales are deposited into Other Account.

Under the new account system, 22% of the material cost and fuel cost were covered by the state budgets, while remaining 78% is covered by the receipts on sales. This system was adopted to make profits and losses of SOEs clearer, so that SOE bear responsibility for their profitability.

When cash to be paid from Other Account is not enough, SOEs borrow bank loans from Myanmar Economic Bank with a 4% interest rate per year. There are not any SOEs which actually borrowed loans from Myanmar Economic Bank as of December 2012.

Loans to SOEs are paid upon requests of SOEs from the state trust fund at Myanmar Economic bank, and the bank does not bear any credit risks (credit risks are covered by the government). The bank does not carry out any credit appraisals.

Unlike production cost, capital investments on equipments are fully financed by the state budget, and SOEs and line ministries are not authorized to carry out investment at their own discretions. When SOEs wish to invest, they send a budget proposal to Ministry of Finance and Revenue through its supervising ministries. The proposed budgets, which are assessed by Ministry of Finance and Revenue, might be reduced or sometimes rejected by the ministry.

Note that the budget allocations, whose processes are based on Budget Law, are finally approved by the parliament[53].

[53] Source: Interviews with MOI (November 2012)

3.4.1.3 Taxations on SOEs

SOEs are supposed to pay a part of the sales to Ministry of Finance and Revenue as commercial tax. Commercial tax rate, which varied among sales items, has been revised to 5% for all items since April 2012[54].

SOEs also pay 25% of their profits to Ministry of Finance and Revenue as income tax. The income tax rates of SOEs are the same as the one for domestic corporate bodies established under Company Act and Special Company Act.

The remaining profits were paid to the government as government contributions, and thus all the profits made by SOEs were transferred to the state accounts. However, SOEs can keep the 55% of profits as retained earnings from April 2012. SOEs use retained earnings for salary payments, pensions and production costs[55].

[54] JETRO homepage (http://www.jetro.go.jp/world/asia/mm/invest_04/)
[55] Source: Interviews with Pharmaceutical Industry (November 2012) and Ministry of Finance and Revenue (December 2012)

4. Progress of Privatization of SOEs

4.1 Policy framework of Privatization

4.1.1 Policies on privatization

Until a few years ago, most privatization cases were sales of state assets, of cinemas and factories, for instance. The government is now focusing on (i) joint venturing, (ii) leasing, and (iii) corporatization, to avoid sales of state assets[56]. The president also mentioned that privatization does not mean sales of government businesses.

Figure 4-1. Extract from the president's speech in June 2012

We need to stop budget deficit as it hurts the national economy and beget ill consequences in the long-run. In doing so, our expenditures must be effective for the programs beneficial to the nation and the people. In addition we must trim down uneconomical and redundant enterprises and cut expenses, while shrinking the State-owned business sector and encouraging privatization. Here, privatization covered by the second phase of reform strategy doesn't mean a big sell-off of government-run businesses. First we will make an assessment of the communication, electricity, energy, forestry, education, health and financial sectors where the ratio of government ownership is large. Then we will increase the ratio of private ownership in these sectors as per the international rules and practices followed by the government encouragement for efficiency promotion. Accordingly, we will form a new Privatization Commission with Vice-President at the helm for a change of methods in reassessing, reviewing and reforming Union ministry-wise scope of operations and ownership ratio.

Source: President Office Homepage

The speech mentioned also that new Privatization Commission is formulated, which is responsible for a more efficient and systematic privatization process. According to Privatization Commission, the criteria for candidate SOEs for JV and lease are (i) inefficient business operations (e.g. equipments are old), and (ii) making big losses.

One of the priority issues of the government in JV and lease is transferring factory employees to privates. The study confirmed that the government sets strict conditions on this, and the private side has to take over all factory employees upon forming a JV or leasing. This condition does not seem to be negotiable, according to the government and private sector.

Upon forming a JV or starting a lease, factory employees, who are taken over by the private side, can choose their own status. Some employees choose to leave the government and become private sector company

[56] Source: Interviews with Privatization Commission (November 2012)

employees. In this case, they can receive government pensions, and receive private based salaries, which might be higher salaries than the government standard. Others choose to remain as government staffs and keep working at a factory. In this case, their salary levels are determined by the government salary table, but salaries are paid by the private. Because they are government staffs, it is not possible for the private enterprise to reduce salaries or dismiss them.

When state assets including factories were sold to private investors in the past, employees were not basically transferred to the private, but to other government projects. One of the reasons why the government emphasizes JV and lease at the moment would be that the government is not active in starting new projects and wishes to reduce personnel costs by transferring employees to private companies through JV and lease.

4.1.2 Official process of JV, lease and asset sales

There are not any written official processes to determine which state assets (including factories) to be privatized and also how to privatize them (e.g. JV, lease or sales). They are basically determined by the initiatives of line ministries. The official processes for JV and lease, whose information was collected from interviews, are explained in the following sections. Sales of state assets are not the government priority, as mentioned above.

4.1.2.1 JV

When forming a JV between the government and private investors, approvals by MIC is necessary. If the business area of JV is natural resources, the proposal on JV is made through line ministries to MIC. If the area is not natural resources, the process is simpler, and the JV companies send the proposal directly to MIC. In each case, Privatization Commission is not involved in the process. MIC assesses the proposal from a technical viewpoint and feasibility before issuing a permit to invest[57].

When forming a JV, the government uses state assets to makes its contributions in kind. The valuations of the state assets are carried out by line ministries in charge.

The government basically does not provide state budgets to JV for financial supports. However, a JV company, whose shares are owned by MOI, might be able to access the credits of SME Development Bank, a private bank whose chairman is Minister of Industry.

SME Development Bank started a loan program with a lower interest rate in 2012, and JV companies are eligible for this program. However, as of December 2012, there are no JV companies which actually borrowed bank loans from SME Development Bank. The loans from SME Development Bank cannot be more than 50 million kyats, which would not be sufficient for large-scale capital investments.

[57] Source: Interviews with MIC (December 2012)

4.1.2.2 Lease

Official approval on lease contracts of state assets is done by a line ministry in charge. They do not have to go through approvals of MIC or Privatization Commission.

When leasing, a notice for bidding on a lease of a state asset is announced on newspapers in general. No matter if there was only one bidder who submitted the proposal, the government can award it as the lowest bidder.

Lease prices are determined based on (i) personnel expenses of employees including contributions to pension funds, (ii) depreciation amounts of the state assets, and (iii) estimated profits. (i) Personnel expenses and (ii) depreciation amount cannot be negotiated with the government, while (iii) estimated profits are discussed between the lessee and the government[58]. The lease fee level is determined and authorized by the line ministry. Either MIC or Privatization Commission is not involved in deciding the lease fee level.

For both JV and lease contract which use state assets, JV companies and lessees would not be allowed to change their business[59] (e.g. from beverage production to vehicle production), while it is possible to change the products in the same business (e.g. from fruit juice to energy drink). The approval of MIC would be necessary to change business in case of JV, while the approval of a line ministry is necessary in case of lease contracts. If profitability of the business is improved by changing the business, the government would try to raise the lease fees, as the lease fees are determined based on profitability. Please note that JV or lease contracts do not seem clearly state that JV company and lessee cannot change their business. It might be also possible to change business to a certain extent through negotiations with the government.

4.1.2.3 Sales of state assets

When selling state assets, a line ministry first makes a notification to Privatization Commission, which will be responsible for sales of state assets. Bidding, which is carried out by Privatization Commission, is compulsory when selling state assets. Valuation of the state asset is done by Valuation Committee under Privatization Commission[60]. MIC is not involved in the process of selling state assets.

Under Privatization Commission, there are two committees, namely Valuation Committee and Land Analysis Committee. Members of both committees are from 10 governmental agencies including Ministry of Agriculture, Ministry of Industry, Union Attorney General's Office, Ministry of Finance and Revenue, Ministry of Interior, Yangon City Development Committee, and Mandalay City Development Committee.

[58] Source: Interviews with Pharmaceutical and Foodstuff Industry (December 2012)
[59] Source: Interviews with Pharmaceutical and Foodstuff Industry (December 2012)
[60] Source: Interview with MOI (December 2012)

Figure 4-2. Summary of JV, lease and sales of state assets

	Approval	Valuation / lease fee	Financial supports by the government
JV	MIC	Line ministry	Possible
Lease	Line ministry	Line ministry	Not possible
Sale	Privatization commission	Privatization commission (Valuation Committee)	Not possible

4.1.3 Issues in JV, lease and sales of state assets

4.1.3.1 JV

Possibility of government interventions on JV management

When a foreign company forms a JV with a SOE, the JV is regarded as a corporation body based on Special Company Act. However, Section 4, 5, 6 and 9 might potentially allow the government to intervene the substances of JV companies[61].

Because of this, legal predictabilities are low for foreign companies; thus, they might be reluctant to form a JV with SOEs.

Issues in the new Foreign Investment Law

Chapter 13 of the new Foreign Investment Law (2012) mentions "Assurance and Guarantee", which ensures that the government does not nationalize economic activities formed with the approval during the contract period (Section 28) and that the government gives assurance and guarantee for the investment amount in the type of foreign currency.

However, foreign investors are concerned if these sections are legally backed up, because conflict resolution measures between companies are not legally sufficient. Actually, foreign companies tend to request MIC or Ministry of Commerce for conciliations and mediations for conflict resolutions, although they are not legally authorized for conciliations and mediations.

[61] The government has a right to determine the names of special companies by notifications. It can also assign the initial members of companies.

4.1.3.2 Lease

Insufficient legal background for lease

Until now, any preceding cases have not seen in which SOEs leased state assets to foreign companies, and it is not sure if leasing of state assets to foreign companies is legally possible or not.

It is possible for a foreign company to have a lease contract on land up to 5,000 acres for 10 to 30 years (can be extended up to 50 years)[62]. However, at the same time, Transfer of Immovable Property Restriction Law 1987 mentions that a lease period of land cannot be longer than 1 year.

Therefore, it would be necessary to establish laws and regulations on land lease, in order to enhance legal predictability for foreign investors.

4.1.3.3 Sales of state assets

Insufficient legal background on land

Even if foreign companies can obtain land usage rights through leases, they might not be able transfer them after the termination of business operations, as mentioned in Section 4 of Transfer of Immovable Property Restriction Law (1987).

Other issues in land lie in the valuation of land use right. Because there are not any clear rules on valuations of state assets, private investors might face difficulties in transferring the assets.

[62] JETRO homepage

4.2 Examples of Privatization (including examination of relationships between the government and privatized SOEs)

4.2.1 Examples of Privatization

4.2.1.1 Example 1:Lease of a textile factory

Summary of Lease agreement and background of negotiation

- Use two textile factories under lease contracts with the government concluded in September 2011.
- Lease contract was concluded through direct negotiation, without any bidding process.
- Lease fee was determined through negotiations at the level that the lessee can make sufficient profits
- Factory employees were transferred to the lessee.

Business activity after contract

- The company carries out commissioned production or CMP (cut, manufacturing and packaging) of garments for men, women and children based on contracts with Japanese companies and Korea companies.

Status of factory employees

- The company took over all employees (850 persons) who worked in the factory as a precondition to the lease agreement. The employment status of 650 persons was changed from government officials to its own employees and the government paid pensions. The status of remaining 200 persons is still government officials but the company pays them salaries. Additionally, the company make deposits to pension funds for them based on a government standard
- Skills of workers are at a sufficient level. However, the employees are rather old (over 40 years old) and work efficiency is not high.

Financial support by the government

- The government did not make any offers on financial supports, including bank loans from state-owned banks with lower interest rates.

Others

- Under the lease contract, it does not seem to be allowed to change the business activities from the textile industry to other industries (e.g. automotive business). On the other hand, it is possible to change the business activity from sewing to making fabrics within the textile industry. However, there might be room to negotiate with the government about changing the business in cases where it is impossible to continue textile business in the future.

4.2.1.2 Example 2: JV on an industrial alcohol factory

Summary of JV agreement and background of negotiation

- The company is a JV of a private company and the government established in 2011 for producing industrial alcohol.
- Capital of JV is 6 billion kyats. The government holds 70% of shares and the private company holds 30%.

Business activity after contract

- The factory was originally established by MOI in 1987. The government (MOI) made contributions in kind such as buildings, machines and land-use-right. A shareholder of shares of the government is not Ministry of Finance and Revenue, but Ministry of Industry.
- Contribution by the private investor was made in cash, which was used for equipment investment (e.g. chaff boiler) and working capital. The old gas-fired boilers in the factory were replaced because of a surge in natural gas price due to the unification of the exchange rate.
- The factory produces industrial alcohol (ethanol), which was distributed to the market, but currently is sold only to the private shareholders.
- The board of directors is composed of 7 directors, and Dr. Cho Win Maw, Managing Director of Pharmaceutical and Foodstuff Industry, is the chairman. Four out of seven directors are officials of Pharmaceutical and Foodstuff Industry. They do not receive any remuneration for their part-time work as board members.
- The managing director of the JV company is the private investor. Pharmaceutical and Foodstuff Industry is not involved in factory operations.

Status of factory employees

- The number of employees is 139. Previously, employees were government staffs but every employee now has moved to a direct contract with the JV company. The company does not have the right to decrease their remuneration. The government pays pensions to them upon transfer.

Financial support by the government

- The JV company cannot provide assets as collaterals because they assets are state-owned.
- It might be possible to get a loan with a low interest rate from SME Development Bank if Ministry or Industry writes a recommendation to the bank.

Others

- Shares of the government (4.2 billion kyats, which is worth 70 % of capital) were evaluated by Valuation Commission which was under the umbrella of the former Privatization Commission in 2011.

- Privatization Commission will not engage in asset valuation, after the formation of a new commission in 2012. (The commission is involved in valuation of asset sales only.)
- Ministry of Industry receives dividends from the company in the case of surplus, but director from MOI do not receive dividends. Dividends are not returned to Ministry of Finance and Revenue and the national treasury, but are incorporated into the budget of Ministry of Industry.
- Since the price of land is rising, equity of the government become large when contributing in kind. Therefore, it has become difficult to organize JVs.
- The company has built factories in rural areas / distant places so far and has invested in infrastructures (e.g. power distribution, roads, and gas pipelines). Because company's assets include these investments, equity of the government becomes too large.
- The book value after depreciation is used in evaluation upon the contribution in kind by government.

4.2.1.3 Example 3: Lease of a beverage factory (in 1995)

Summary of Lease agreement and background of negotiation

- This company entered into a lease agreement with the government on two factories in Yangon and one factory in Mandalay in 1995 and started producing soft drinks.
- The lease period is 20 years. The lease fee, which was set rather low, has not been revised since the beginning of the lease agreement.

Business activity after contract

- In addition to the factories on lease, the company also built factories with its own funds to expand its production capacity and product lines.

Status of factory employees

- The company took over all employees from the government at the beginning of the lease contract. Every employee has a direct contract with the company and currently none of them has a status as government staff.

Financial support by the government

- Equipments were replaced at the inception of the lease, under the state budget in 1995. Such equipments were also included in the lease contract.

- Financial support by the government has not been provided except in this case and the company self-financed other equipment.

Others

- The company bought the factory in Mandalay for 50 billion kyats from the government in 2009. The company is also negotiating with the government remaining two factories as well. Privatization Commission is the counterpart, and Ministry of Industry is not involved in this negotiation.

4.2.2 Examination of relationships between the government and privatized SOEs

4.2.2.1 Financial relationships between the government and privatized SOEs

When SOEs or state-owned factories are privatized through JVs and leases, they are clearly separated from the state budget. Thus, the state budget is not allocated to these privatized SOEs to cover production costs or personnel costs. When state-owned factories are transferred to the private sector through JV or lease contracts, government staffs are taken over by the JV company or the lessee (private), who pay their salaries. The government is not going to allocate any state budget for them.

In a lease contract started in 1995, the government carried out capital investments on equipments which were then leased to a private lessee in order to reduce financial burdens of investments by the private lessee. There are no other recent examples like this case, where the government provides financial support for capital investments.

JV companies or lessees cannot basically receive any financial support from the government, including loans from state-owned banks with favorable terms. Although JV companies might be able to obtain loans at a lower interest rate from SME Development Bank (a private bank with a strong tie with MOI), the amount of bank loans provided by SME Development Bank is not big enough to cover large-sized capital investments. At the same time, JV companies might have difficulties in accessing bank loans, as the state assets that the government uses as contributions in kind are still regarded as state assets and cannot be used as collateral[63].

Private lessees can also be candidates for users of the favorable loans of SME Development Bank. However, it is not clear if MOI can write recommendation letters for them. Private lessees would not be able to use assets for collateral, as they are state assets.

[63] Source: Interviews with Pharmaceutical and Foodstuff Industry (December 2012)

Overview of the low interest loan program of SME Development Bank

<Loan conditions>

- Interest rate: 8.5% (Market rate is 13%)
- Loan duration: 3 years
- Maximum loan amount per borrower: 50 million kyats
- Purpose of loans: Capital investment on equipments and export

<Application and appraisal process>

- Applicants submit applications to SME Service Center of MOI
- When applied, SME Service Center review the overviews and business operations of the applicants. SME Service Center also carries out a factory review on site.
- After the review, the center issues "Letter of recommendation[64]" to SME Development Bank.
- SME Development Bank reviews the asset value of land and buildings for collateral in two weeks (loan amounts are up to 30% of the asset value).
- Six months after the disbursement, SME Service Center examines the status of equipments or factories, to which loans were used.

<Others>

- SME Service Center received more than 200 applications since the loan program started in December 2012. 3% of the 200 applicants received loans, 7 % is under the screening process (as of January 2013), and 90% were rejected. Main reasons for the rejections are a lack of assets for collateral.
- SME Service Center has not received any applications from JV companies (as of January 2013). JV companies are also eligible for loans of SME Development Bank.

Source: Interview with SME Service Center of MOI

[64] The center mentioned that they issued "Guarantee Certification", but it was confirmed that the center or MOI does not guarantee bank loans. This can be regarded as a recommendation letter.

4.2.2.2 Managerial and personnel relationship between privatized SOEs and the government

In JV companies, officials of SOEs participate in the board of management as board members. However, business operations of the JV companies are mostly conducted by the private sector management staffs. Board members from SOEs only monitor financial status.

In the case of a lease, SOEs do not send any SOE officials as board members to the lessee, and business operations of the lessee are fully independent of the government.

Factory employees who are regarded as government employees are basically transferred to JV companies or private lessees. One of the government priorities in concluding JV or lease contracts is transferring all factory employees, and it does not seem possible for private investors to negotiate the number of factory employees to be transferred. This is because the government is trying to reduce its budget deficit by reducing personnel expenses.

When transferred to a JV company or private lessee, factory employees can choose their status from the following options:

i) Work at the factory as government staffs, receiving a salary on the government basis (salaries are paid by JV companies or private lessees).
ii) Leave the government and become the private sector factory staff, receiving a private based salary and government pensions.
iii) Move to other government agencies.

If a factory employee chooses to maintain the government staff status as i), he / she does not lose a job, and the salary level is not decreased. However, most of the factory staffs choose to become ii) private factory staffs. Factory staffs that choose to move to other government agencies are not common.

5. Business Conditions and Issues of State-owned Economic Enterprises

5.1 State-owned Economic Enterprises (SOEs) under Ministry of Industry and Selected SOEs for Research

Ministry of Industry (MOI) has the following 6 enterprises: Heavy Industries (1), Heavy Industries (2), Heavy Industries (3), Pharmaceutical and Foodstuff, Textile, and Paper and Home Utilities. Each enterprise manufactures the following main products:

- Heavy Industries (1): Cars, trucks, SUVs, construction equipment, agricultural equipment, diesel engines, etc.
- Heavy Industries (2): Tyres, machine tools, cables, LEDs, turbines, generators, etc.
- Heavy Industries (3): Cement, fire clay brick, ceramic tableware, glass, mirrors, etc.
- Pharmaceutical and Foodstuff: Medicines, vaccines, health materials, syringes, purified drinking water, plastic, etc.
- Textile: Yarn, fabric, garment, knitting
- Paper and Home Utilities: Cultural paper, newsprint paper, cardboard paper, hydrogen peroxide, bicycles, stainless steel furniture, sewing machines, footwear, etc.

Moreover, there are 54 factories in total under the 6 enterprises as of November 2012 (24 factories for heavy industries and 30 factories for light industries). See the table in the next page. Of which, through consultation with MOI, we selected 10 factories and conducted research (See the table below).

Figure 5-1. Selected SOE Factories for Research

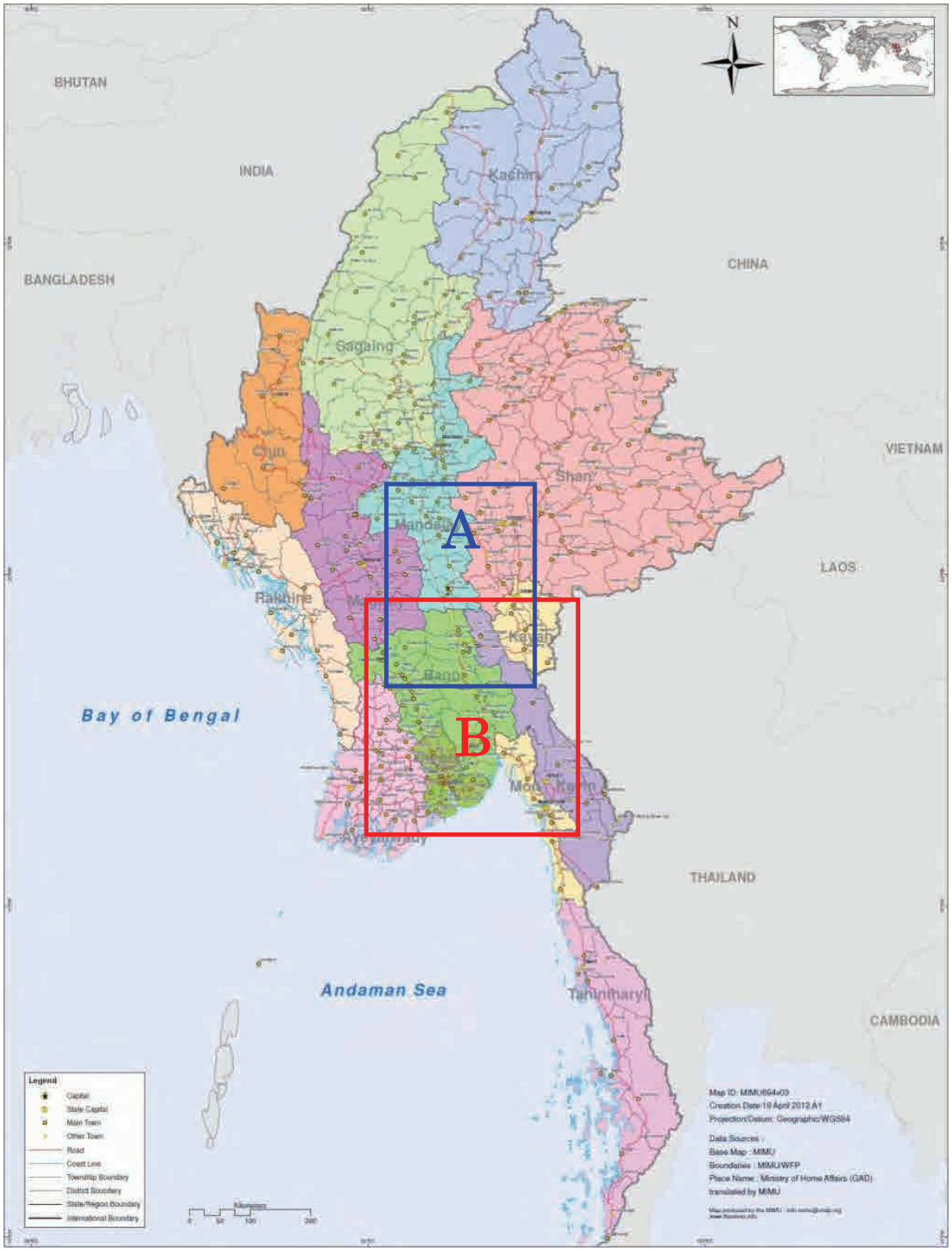
Enterprise	Factory	Region
Heavy Industries (1)	#12 Vehicles & Components	Htonebo
	#14 Diesel Engines	Thargaya
	#16 Agricultural Equipment	Sinde
Heavy Industries (2)	#22 Radial Tyres	Belin
Heavy Industries (3)	#31 Cement	Thayet
	#32 Cement	Kyangin
	#33 Cement	Kyaukse
Pharmaceutical & Foodstuff	#1 Pharmaceutical	Yangon
Textile	#1 Textile	Shwedaung
	#3 Textile	Sagaing

Figure 5-2. List of SOEs (factories) under MOI

	#	Factory	City	Main Product
Heavy Industries (1)	1	No.(11)	Mayangone, Yangon	Car, Truck, Tanker, Wagon, Jeep
	2	No.(12)	Padaung, Bago	Cab, Sport Utility Vehicle
	3	No.(13)	Magwe, Magwe	Truck, Mini Bus, Gear Box, Transmission
	4	No.(14)	Yaydashe, Bago	Engine
	5	No.(15)	Yaydashe, Bago	Bulldozer, Excavator, Fork Lift
	6	No.(16)	Sinde, Bago	Seeder, Tiller, Pump, Reaper
	7	No.(17)	Malun, Magwe	Tractor, Trailer, Rice Thresher, Rice Mill
	8	No.(18)	Kyaukse, Mandalay	Diesel Engine, Combined Harvester, Gear Box
Heavy Industries (2)	1	No.(21)	Thaton, Mon	Vehicle Tyres, Motor Cycle Tyre
	2	No.(22)	Belin, Mon	Radial Tyre
	3	No.(23)	Padaung, Bago	Machine Tool, Engineering Product, Cable
	4	No.(24)	Dagon, Yangon	Battery, Oxygen, Acetylene, LED
	5	No.(25)	Pakokku, Magwe	Machine Tools, Lathe, Drilling Machine
	6	No.(26)	Yedashe, Bago	Francis Turbine, Generator
Heavy Industries (3)	1	No.(31)	Thayet, Magwe	Cement
	2	No.(32)	Kyangin, Ayeyarwaddy	Cement
	3	No.(32)	Mhawbe, Yangon	Asbestos Cement (Roofing, Ceiling Sheet)
	4	No.(33)	Kyaukse, Mandalay	Cement
	5	No.(33)	Kyaukse, Mandalay	Fire Clay Brick, High Alumina Brick
	6	No.(34)	Thayawaddy, Bago	Ceramic Tableware, Sanitaryware, Tile
	7	No.(34)	Insein, Yangon	Clay Brick, Chrome Magnesite Brick
	8	No.(35)	Chauk, Magwe	High Voltage Insulator
	9	No.(36)	Kyaukse, Mandalay	Glass, Mirror
	10	No.(36)	Pathein, Ayeyarwaddy	Sheet Glass
Paper & Home Utilities	1	Cultural Paper Mill	Thabaung, Ayeyarwaddy	Bleached Bamboo Pulp Cultural Paper
	2	Paper Mill	Kyaukse, Mandalay	Newsprint Paper, Tissue Paper
	3	Paper Mill	Yeni, Bago	Kraft Sack Paper, Cardboard Paper, CTMP Pulp
	4	H2O2	Chauk, Magwe	H2O2(50%)
	5	Bicycle Factory	Kyaukse, Mandalay	Bicycle
	6	Home Utility Factory acre	Kyaukse, Mandalay	Stainless Steel Ware and Steel Furniture
	7	Sewing Machine Factory	Kyaukse, Mandalay	Sewing Machine Arm Bed
	8	Footwear Factory	Kyaukse, Mandalay	Various Kinds of Footwear
Textile	1	No.(1) (Shwedaung)	Pyay, Bago	Yarn, Fabric
	2	No.(1) Branch (Mayangone)	Mayangone, Yangon	Yarn, Fabric
	3	No.(2) (Paleik)	Sinkkaing, Mandalay	Yarn, Fabric
	4	No.(2) Branch (Myingyan)	Myingyan, Mandalay	Yarn, Fabric
	5	No.(3) (Sagaing)	Sagaing, Sagaing	Yarn, Fabric
	6	No.(3) Branch (Sagaing)	Sagaing, Sagaing	Garment
	7	No.(4) (Pwintphyu)	Pwintphyu, Magwe	Yarn, Fabric
	8	No.(5) (Pakokku)	Pakokku, Magwe	Yarn, Fabric
	9	No.(6) (Sarlingyi)	Sarlingyi, Sarlingyi	Yarn, Fabric
	10	No.(6) Branch (Monywa)	Monywa, Sagaing	Yarn, Fabric
	11	No.(7) (Myitthar)	Myitthar, Mandalay	Yarn
	12	No.(7) Branch (Wundwin)	Wundwin, Mandalay	Yarn, Fabric
	13	No.(8) (Pyawbwe)	Pyawbwe, Mandalay	Yarn
	14	No.(8) Branch (Yamethin)	Yamethin, Mandalay	Fabric
	15	No.(9) (Kyaukse)	Kyaukse, Mandalay	Knitting
	16	No.(9) (Insein)	Insein, Yangon	Knitting
	17	No.(10) (Taungtha)	Taungtha, Mandalay	Knitting
	18	No.(11) (Pakokku)	Pakokku, Magwe	Garment
Pharmaceutical & Foodstuff	1	Pharmaceutical Factory	Insein, Yangon	Medicine, Vaccine, Health Material
	2	Pharmaceutical Factory	Inyaung, Mandalay	Syringe, Purified Drinking Water
	3	Plastic Factory	Kyaukse, Mandalay	Plastic
	4	Horses & Sheep Breeding Fa	Yanpe, Magwe	Integrated Corn Products Factory
Total	54	Factories		

Source: Created from documents received from MOI.

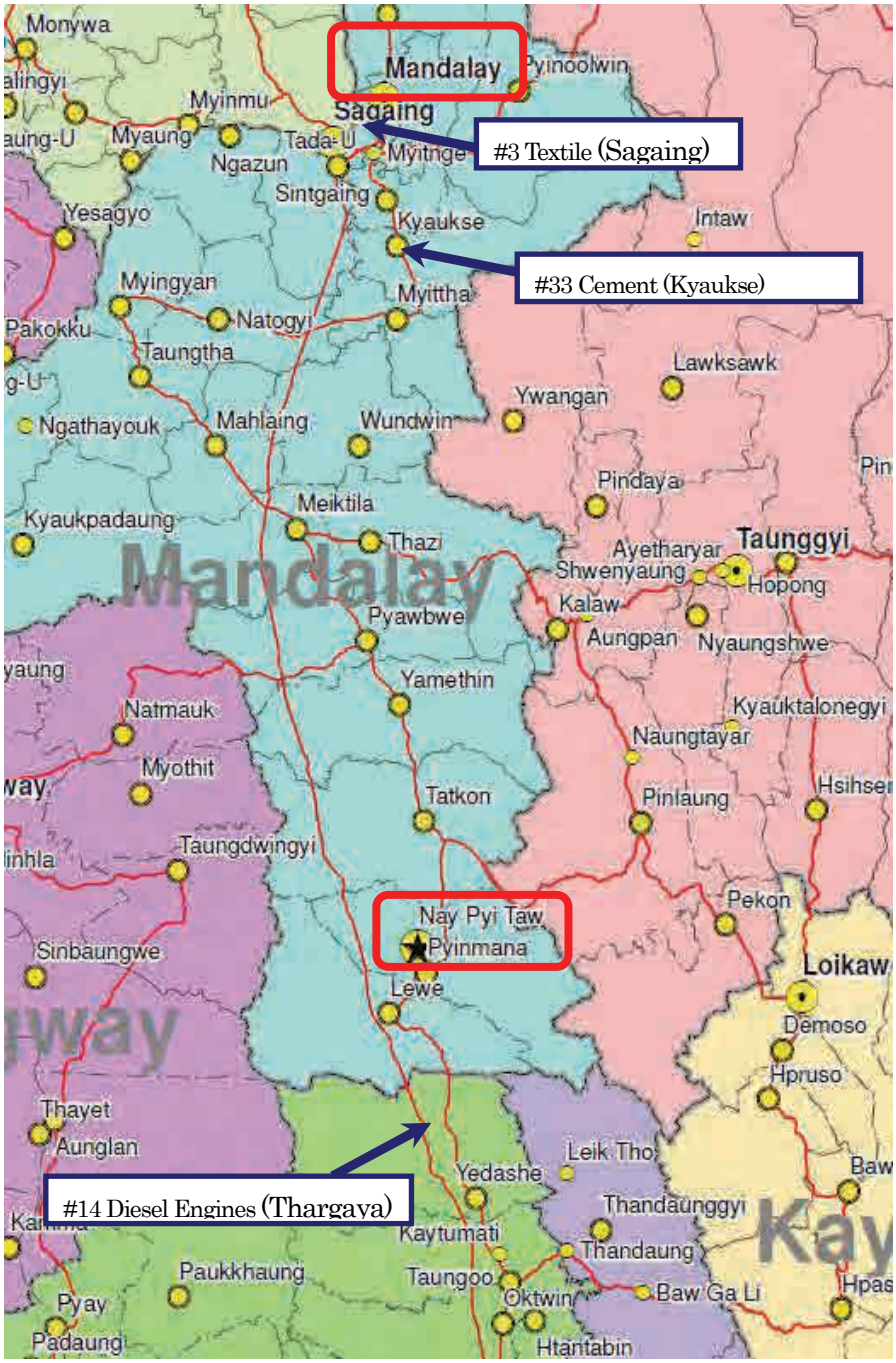
Figure 5-3. Map of Selected SOEs for Research (Nationwide)



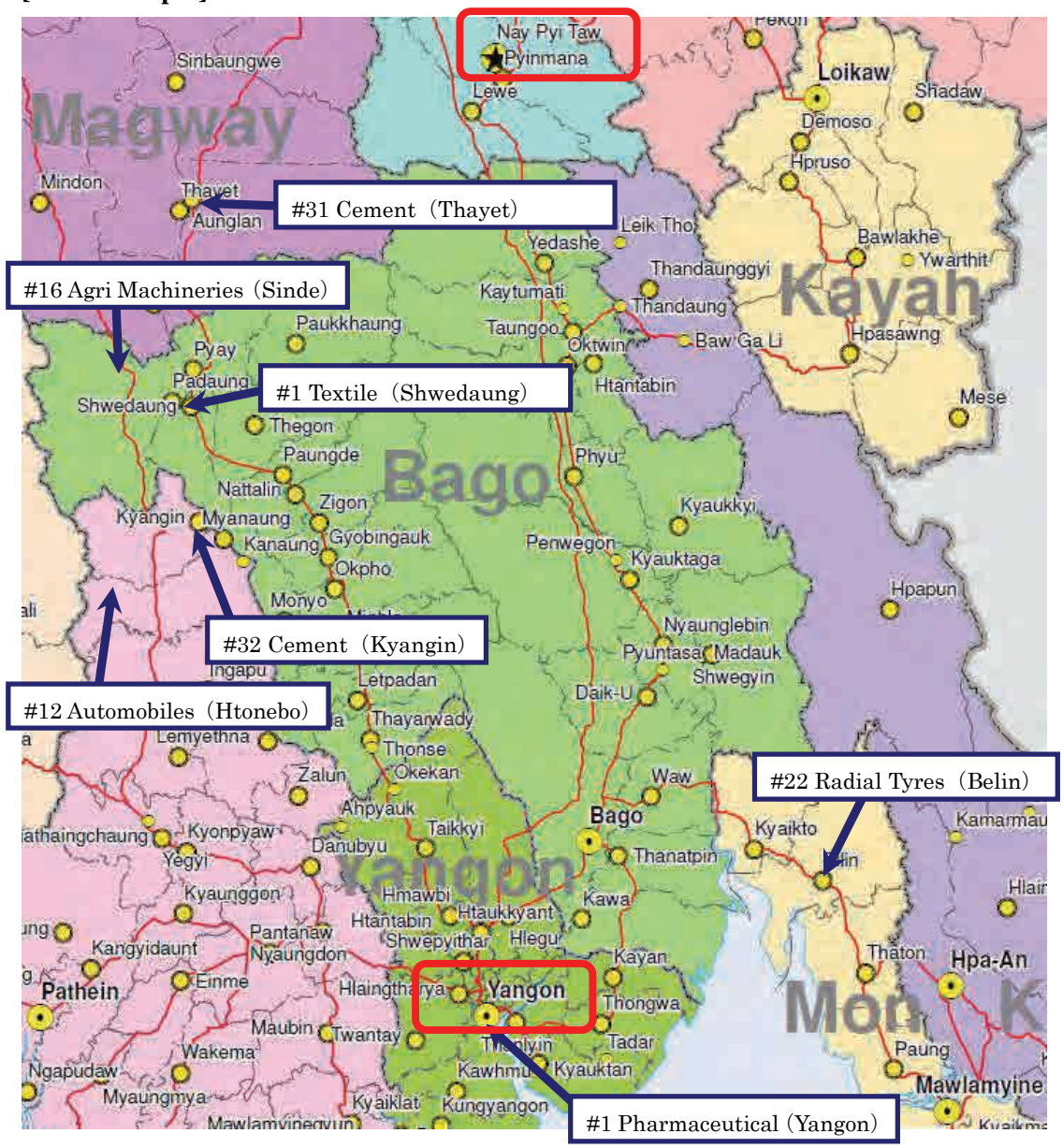
Source: Myanmar Information Management Unit (MIMU) website

(http://www.themimu.info/download.php?file=docs/MIMU694v03_120419_Myanmar%20Overview%20Map_Eng_A1.pdf)

[Detailed Map A]



[Detailed Map B]



5.2 Business Conditions and Issues of Selected State-owned Economic Enterprises

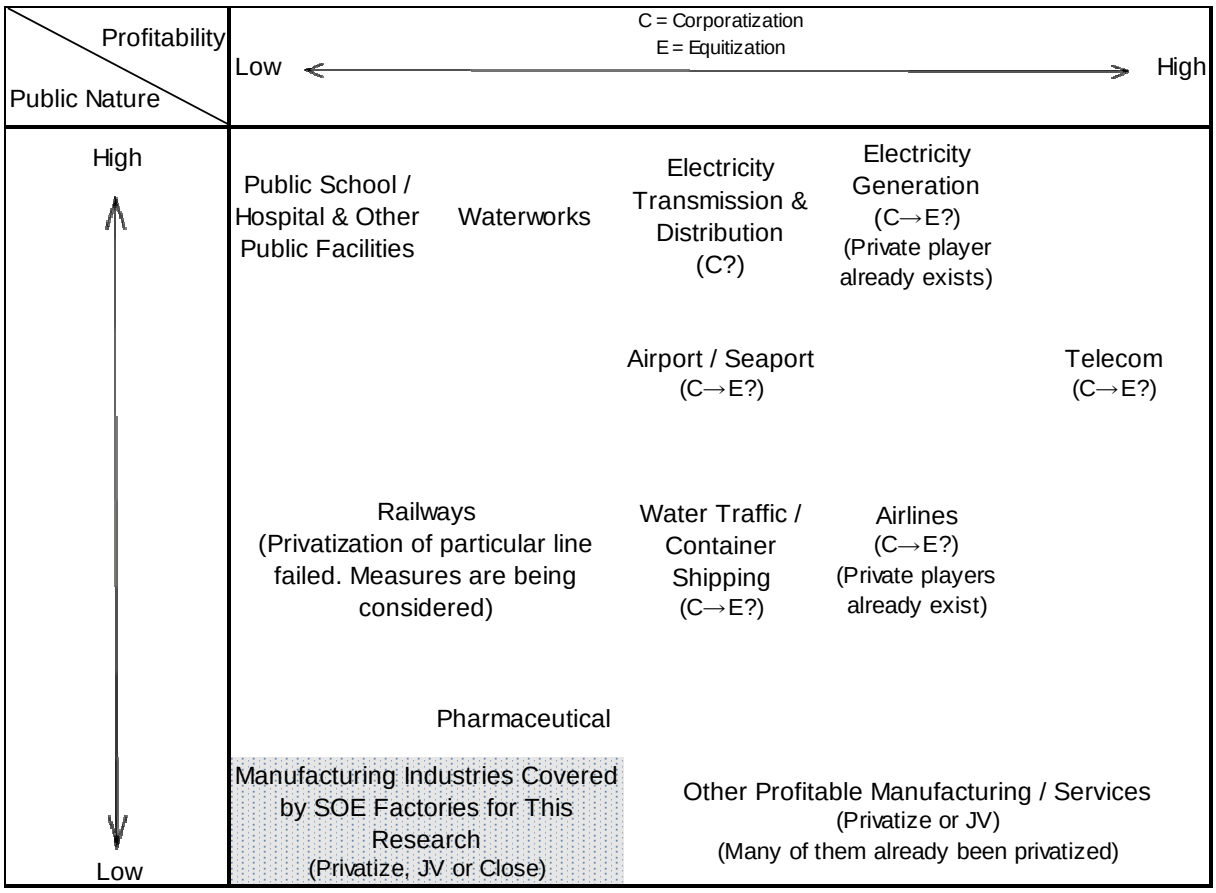
We visited selected SOEs (10 factories) in November and December 2012 and conducted interviews and factory tours. Our observation of the 10 factories is summarized in the table below and details by factory are described afterword.

Figure 5-4. Summary of Observations of Selected SOE Factories for Research

<table>
<tr><th rowspan="2">Enterprise</th><th rowspan="2">Factory</th><th colspan="3">FY 2011-2012</th><th colspan="2">Forecast</th></tr>
<tr><th>Operating Profit (using Market FX Rate)</th><th>Competition, Cost, Demand</th><th>Equipment / Facility</th><th>Operating Profit</th><th>Factor</th></tr>
<tr><td rowspan="3">Heavy (1)</td><td>#12 Vehicles & Components (Htonebo)</td><td rowspan="5">Loss</td><td rowspan="4">* Lack price/product competitiveness compared to cheap imports
* Expensive imported raw material cost
* Low demand</td><td>Outdated</td><td rowspan="5">Loss</td><td rowspan="4">* Low demand
* Increase in imported raw material cost due to the abolition of official FX rate</td></tr>
<tr><td>#14 Diesel Engines (Thargaya)</td><td>New</td></tr>
<tr><td>#16 Agricultural Equipment (Sinde)</td><td>Outdated</td></tr>
<tr><td>Heavy (2)</td><td>#22 Radial Tyres (Belin)</td><td>New</td></tr>
<tr><td rowspan="3">Heavy (3)</td><td>#31 Cement (Thayet)</td><td rowspan="2">* Fierce competition with imported & domestic products
* Low quality, but high demand in the North
* Increase in demand
* Kyaukse has location advantage and can use alternative fuel</td><td>Outdated</td><td>Steep rise in fuel cost caused by depletion of inland natural gas</td></tr>
<tr><td>#32 Cement (Kyangin)</td><td rowspan="2">Profit</td><td rowspan="2">Outdated</td><td rowspan="3">Loss</td></tr>
<tr><td>#33 Cement (Kyaukse)</td><td>Relatively New</td><td>Possible to turn Loss</td><td>Provision of cheap inland natural gas is expected to be terminated in next FY</td></tr>
<tr><td>Pharmaceutical & Foodstuff</td><td>#1 Pharmaceutical (Yangon)</td><td>* Fierce competition with imports, but brand recognition is high
* Expensive imported raw material cost
* Flat demand</td><td>Increase in imported raw material cost due to the abolition of official FX rate</td></tr>
<tr><td rowspan="2">Textile</td><td>#1 Textile (Shwedaung)</td><td rowspan="2">Loss</td><td rowspan="2">* Lack price/product competitiveness compared to cheap imports</td><td rowspan="2">* Low demand
* Increase in cost</td></tr>
<tr><td>#3 Textile (Sagaing)</td></tr>
</table>

Industries covered by MOI are not necessarily considered public enough for the government to exclusively operate businesses in the concerned industries (See Table in the next page), and market share of private sector companies in such industries is already high. However, not only from perspectives of national and social security, but also from perspectives of leading strengthening / accumulation of domestic technology and fostering domestic production, there could be occasions where the government decides to keep some factories as SOE factories if the government considers they belong to important industries with respect to policy.

Figure 5-5. Current Situation of SOE Privatization in Myanmar



Source: Created based on interviews with Ministry of National Planning and Economic Development

5.2.1 Heavy Industries (1) Factory #12 (Vehicles and Components; Htonebo)

We visited the factory #12 (Vehicles and Components in Htonebo) on November 12, 2012 and conducted an interview and factory tour. Points of our observation are as follows:

- Amid the ongoing market liberalization, factory products cannot compete with imported used cars, and sales price and revenues decline.
- Sales of cars manufactured at the Htonebo factory is so small compared to the increase in the number of imported used cars. Brand awareness of the factory's products is considerably low.
- Profitability of the factory drastically worsens due to a huge rise in the cost of imported raw materials with the abolition of the official foreign exchange rate in April 2012.
- The number of cars sold in 9 months in FY 2012-2013 is only about 80 cars, which seems to be significantly below the initial sales plan.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.1.1 Overview of the Factory

Factory #12 under Heavy Industries Enterprise (1) is a vehicles and components plant established in 1970. Since its establishment, the factory manufactured Mazda's jeep type four-wheel drive vehicles such as Mazda X2000. The factory completed construction in 1973 and started operation in 1974. Presently, the factory mainly manufactures pickup trucks such as Myanmar Double Cabs (four doors) and Myanmar Single Cabs (two doors). Both cars are vehicles called Grand Tiger introduced by a Chinese company called ZX Auto. Additionally, the factory manufactures agricultural engine parts by utilizing their casting equipment for engine parts.

The number of employees is 1,073 (the document provided by the enterprise indicated 1,059). Of which, 41 are officers above Assistant Managers (40 in the enterprise document) and 1,032 are other employees (1,019 in the enterprise document).

Further, the factory is in the inland area situated about 1.5 hours away on a rough road from the town of Pyay and has little location advantage due to inconvenient access from neighboring cities.

5.2.1.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

Under General Manager and Deputy General Manager (currently vacant), there are Planning, Administration, Finance, Production, and Quality Control Departments. 6 Assistant General Managers oversee Planning, Administration, Finance, and Production. Managers supervise relatively small Quality Control Department. Except for Quality Control, four departments comprise of Assistant General Managers and 14 managers handling 3 to 6 sections.

3. Management's decision making process

Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

MOI determines the amount of production, suppliers, and distributors and procures raw materials, parts, and fuel. The factory manufactures vehicles and related products using the raw materials, parts, and fuel procured by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

An MOI employee is assigned as a general manager who has vast management knowledge and experience of vehicles manufacturing. The current general manager holds a bachelor's degree in mechanical engineering and has been working for MOI for about 28 years. He has experience in training related to automobile manufacturing abroad (Singapore, Japan, China, etc.).

6. Management ethics

MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations. Slogans on automobile production activities were posted in many parts of the factory.

7. Business plan

MOI determines the amount of annual production. Factories will not create business plans.

8. Public nature of the business (provision of employment opportunities)

About 80% of 1,073 employees are from the local area, and the factory seems to contribute to job creation to a certain degree. Many of the employees live in factory dorms (about 500 dorms) in the factory as it is located far from the city.

9. Market share, competition environment with private sector companies

Most of the cars manufactured at the factory are sold to government agencies. 80% of their core products (Double Cab) are sold for Ministry of Defense (the sales price per car is 23.8 million kyats) and 20% are sold for other government agencies such as Cabinet, Ministry of Home Affairs (Police), etc. (the sales price is 25 million kyats). On the other hand, there are not a lot of products sold in the market (the sales price is also 25 million kyats).

The sales price has been gradually decreased from 50 million kyats at the commencement of production to about a half of that price now (23.8 to 25 million kyats). The factory is requested to sell their products at a market price based on product specifications as "market mechanism and free trade" are the government's basic policy even for sales to government agencies.

After the ban was lifted on used car imports at the end of 2011, the factory is facing price competitions with imported Japanese used cars. Only few of their products are sold in the market, and their market share is assumed to be below 1%

Even though the factory is planning to deal with the competition by reducing manufacturing cost, decreasing the sales price, and improving the product quality, they do not have concrete measures at this point.

5.2.1.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety.

1. Profitability

Rates of return on invested capital (rate of return on income before interest and tax times turnover ratio of long-term fixed capital) for the past 3 years are extraordinarily high: 2,127.94% in FY 2009-2010, 3,700.02% in FY 2010-2011, and 2,577.06% in FY 2011-2012, respectively. The reasons why the rate of return on invested capital was high are the factory's long-term fixed capital is extremely low compared to the other SOEs (factories) selected for research and the turnover ratio of long-term fixed capital is very high. Average long-term fixed capital is 0.83 billion kyats for FY 2011-2012 (of which, 0.21 billion kyats for loans, 0.61 billion kyats for equity, and none for government accounts), which is about 1% to 12% of average long-term fixed capital of other SOEs selected for research.

In addition, we adjusted the sales amount with the market price and simulated the factory's cost of imported raw materials and operating income using the market exchange rate in FY 2011-2012 (1USD = 800 kyats) even though the official rate was used during that period. We found that the simulated operating income turned to a loss of 1,630 million kyats (estimated figure), while the factory reported a profit of 15,526 million kyats.

2. Growth potential

Sales in FY 2011-2012 (2.79 billion kyats) decreased by 35% compared to sales in FY 2010-2011 (42.8 billion kyats). We expect that the factory will continuously face price competition with cheap imports from abroad. The government will likely be forced to reduce the sales price by taking the market price into consideration. Thus, we expect that sales will decline even though the government demand is stable.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.1.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

   There are 6 sections under Production Department, and a manager is assigned in each section under the supervision of 3 Assistant General Managers.

2. Production plan

   MOI determines the amount of annual production, and factories are to manufacture products based on the amount of raw materials, parts, and fuel procured by MOI. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans.

3. Production technology (production efficiency)

   The factory manufactures a whole vehicle using parts and materials (engines, wire harnesses, electronic components, glass, etc.) imported from ZX Auto (a Chinese company the factory has a procurement contract with) and using parts procured domestically and parts made in-house (parts such as body made with casting iron, frames, instrument panels).

   Monthly sales per employee between FY 2009-2010 and 2011-2012 are highest among the 3 factories under Heavy Industries Enterprise (1): 2.39 million kyats, 3.29 million kyats, and 2.20 million kyats, respectively. However, compared to the last fiscal year, sales in the latest fiscal year (2011-2012) declined significantly due to the decrease in the amount of cars sold.

4. Process management

   Based on the amount of production determined by MOI, the factory calculates the amount of raw materials, parts, and fuel necessary and asks MOI to procure them. Products are manufactured according to the amount of available raw materials, parts, and fuel. The amount of available materials determines the amount of production. Hence, if necessary materials are not readily available and are not procured enough, it will be difficult to maintain process management.

   The factory has an annual contract with ZX Auto to procure parts and raw materials based on the annual production amount and renews the contract every year. Parts and raw materials imported from China are transported by land from the Yangon port. Molds used to manufacture parts and components at the factory are also imported from China. On the other hand, batteries, interior parts (manufactured at the Sinde factory) and tyres are procured domestically.

Since a lot of the process relies on manual work and the amount of production is very low (400 cars in FY 2012-2013), it is difficult to achieve volume efficiency and improve price competitiveness.

5. Work management

Work hours of factory employees are generally from 8:00 to 16:00, and there is an hour of rest in between. Work methods seem to be standardized; however, the rate of operation is low and there should be a demand issue to be addressed before improving work management.

6. Cost control

Breakdown of cost of goods manufactured in FY 2011-2012 is that raw materials cost accounts for the majority of the cost (67%), followed by 20% of outsourced personnel expense and 8% of labor cost.

We are concerned about a huge increase in the cost of raw materials including the cost of parts due to the change of foreign exchange rate from the official rate to the market rate in FY 2012-2013. We anticipate that the factory's profitability will be largely lowered by the steep rise in the cost of raw materials based on USD and Euro.

7. Equipment management / work environment

Even though there are Chinese machines installed in the latter half of the 2000's, a lot of equipment used since the 1970's is outdated. Furthermore, the factory no longer manufactures engines and other products, many facilities are operated to a limited extend and some of them are virtually left idle. We occasionally came across with employees wearing sandals only and without helmets in the factory and consider that work environment is not necessarily appropriate from a safety and health perspective.

5.2.1.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

The automobile sales market in Myanmar is dominated by imported used cars mainly from Japan and other countries. The number of imported used cars in 2012 seemed to have reached over 110,000 or more than 5 fold compared to 2011. In addition, if inexpensive high quality Japanese used cars are imported more and the trend of new car imports moves into high gear after the establishment of ASEAN Community in 2015, competitions with countries such as Thailand and Malaysia will become intense.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells automobiles to Ministry of Defense, Cabinet, Ministry of Home Affairs (Police) and so forth. There is a showroom in Yangon, but there are not so many prospective customers at the site, and recent sales to the market are very few. The factory does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

Annual production capacity is 1,500 for Double Cabs and 200 for Single Cabs. Actual production of Double Cab is 354 (There are 255 cars in inventory from the last fiscal year, and the sales plan for this fiscal year is 609 cars) and actual production of Single Cab is 46 in FY 2012-2013.

When we confirmed during our visit to Heavy Industries Enterprise (1) at the end of January 2013, the number of sales in 9 months of FY 2012-2013 was only about 80 cars, which is significantly below the target. Demand (including government demand) is declining, and it is highly likely that profitability worsens substantially in FY 2012-2013.

3. Operating structure of distribution department, customer management

The factory ships out all products directly to government agencies. Finished automobiles are driven and transported one by one to Naypyitaw by way of Yangon and delivered to government clients. The sales number is small, and the factory has no discretion over changing the number of sales. Thus, we do not think that they are in the position to require customer management.

4. Cooperation with external entities (wholesale, retail)

Since the factory sells its products to government agencies directly, there is no cooperation with external entities regarding wholesale and retail operations.

5.2.1.6 Issues

Based on the findings of the research, the following issues can be raised:

Management:

- With the factory's poor product competitiveness and a sharp rise in the number of imported used cars from countries like Japan, it is difficult for the factory to expand their market share.
- Sudden increase in government demand cannot be anticipated. The actual number of sales in FY 2012-2013 seems to be significantly below the plan.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to

create business plans, and knowledge of the principle of market mechanism.

Finance:

- With regard to growth potential of the factory (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to increase due to a rise in the cost of imported parts and raw materials; thus, profitability is expected to largely decline.

Production:

- Since a lot of the process relies on manual work and the amount of production is very low (400 cars in FY 2012-2013), it is difficult to achieve volume efficiency and improve price competitiveness.
- A huge increase in the cost of raw materials including the cost of parts is expected due to the change of foreign exchange rate from the official rate to the market rate in FY 2012-2013. The factory's profitability will be largely lowered by the steep rise in the cost of raw materials based on USD and Euro.

Distribution:

- The automobile sales market in Myanmar is dominated by imported used cars mainly from Japan and other countries. The number of imported used cars in 2012 seemed to have reached over 110,000 or more than 5 fold compared to 2011. Brand awareness of the factory's automobiles is extremely low.
- If inexpensive high quality Japanese used cars are imported more and the trend of new car imports moves into high gear after the establishment of ASEAN Community in 2015, competitions with countries such as Thailand and Malaysia will become intense.
- The factory is situated in the inland area far away from the coast and has little location advantage due to inconvenient access from neighboring cities.

Pictures Taken at the Htonebo Factory in November 2012

5.2.2 Heavy Industries (1) Factory #14 (Diesel Engines; Thargaya)

We visited the factory #14 (Diesel Engines in Thargaya) on November 8, 2012 and conducted an interview and factory tour. Points of our observation are as follows:

- Amid the ongoing market liberalization, factory products cannot compete with imports in terms of product quality, and sales price and revenues decline.
- The factory runs a much larger deficit due to a steep rise in the cost of imported raw materials caused by the abolition of the official foreign exchange rate in April 2012.
- It is difficult to achieve volume efficiency and improve price competitiveness by transitioning from a current small manufacturing operation to a large manufacturing operation.
- It may be required for the government to purchase factory products at a price set higher than the market price, i.e., "Cost + Price" in order to continue production; however, such a requirement seems difficult to fulfill.
- Since the facility is new, it is possible to consider a lease / JV with a private partner or full privatization.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.2.1 Overview of the Factory

Factory # 14 under Heavy Industries Enterprise (1) is a diesel engine plant established in December 2009. Actual production (knockdown production) commenced in November 2011. A Chinese company named Henan Diesel Engine Industry Co., LTD. (hereafter called "HND") that obtained licenses from German companies such as Deutz and MWM provided technical assistance to the factory.

Factory's main products are diesel engines like 6v (for industrial generators), 8v (for industrial generators, small boats), and 12v (for railways, ships). Presently, the factory is not manufacturing 16v diesel engines; however, they are testing for trains and planning to manufacture in the future. In addition, as far as 6v diesel engines are concerned, the factory is planning to manufacture 100 horsepower engines to be installed in light trucks called "Grand Tiger" manufactured in Factory #12 using Chinese technology. The factory also produced a prototype for this light truck using the technology of a Chinese company called Dongfeng Motor Corporation. 3 to 4 mid-sized diesel engines are produced per month.

The number of employees is 518 (36 officers and 482 other employees). Although the factory can hire up to a maximum of 1,200 people, it does not have to hire that many employees since the factory is not in full production.

Further, the factory is in the inland area situated about 50km southeast of Naypyitaw, and its location advantage is low.

5.2.2.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

   MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

   Under General Manager (i.e., factory manager) and Deputy General Manager, there are Planning (96 employees), Administration, Finance and Production Departments. Planning Department has Material Planning (15 employees), Technical Planning, Repair and Maintenance Divisions, etc. Production Department has 3 sections, and a supervisor is assigned in each section. Moreover, workshop managers, assistant managers, and staff members are assigned under supervisors.

3. Management's decision making process

   Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

   MOI determines the amount of production, suppliers, and distributors and procures raw materials. The factory manufactures diesel engines using the raw materials procured by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

   An MOI employee is assigned as a general manager who has vast knowledge of products manufactured by the factory.

6. Management ethics

   MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations. Principles on production activities developed by MOI were posted near the factory entrance.

7. Business plan

MOI determines the amount of annual production and creates plans for new products if MOI deems they are viable. Factories are expected to manufacture products based on the amount of raw materials provided and will not create business plans.

8. Public nature of the business (provision of employment opportunities)

Currently, 518 employees work in the factory, and many of them were transferred from other SOE factories. Employees consist of area residents and workers hired from government training centers. About 80% of the employees live in factory dorms. The factory provides shuttle buses for employees who commute from nearby villages. In the closed economy, this factory was established as an import substitution plant with a goal of strengthening employment opportunities and industrializing the countryside. However, the factory has lost its significance as the market is now more liberalized than ever before and consumers are able to purchase cheaper imported products with better quality.

9. Market share, competition environment with private sector companies

The diesel engine market in Myanmar demands better quality, used Japanese diesel engines, but the market is filled with imported products from China, and other neighboring countries. The factory sells diesel engines to Ministry of Defense, Ministry of Transportation, and Navy. Clients are government only. Since demand for this factory's products does not exist and their products are not competitive, they do not sell in the market. The factory considers that their business could be affected by the lift of import tariff bans in 2010, establishment of ASEAN Community in 2015, and competitive products of neighboring countries; however, they think they have a solid customer base because government agencies are their clients. Hence, the factory does not seem to be so concerned about the level of adverse effects. In this regard, however, if the factory competes with products of other companies, the factory views that it is necessary for the factory to reduce transportation fee (it is expensive as the factory is located far from ports), fuel cost, labor charge and raw material cost and to recruit highly skilled workers and improve the level of technology.

5.2.2.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 3 years are extremely low: 0.07% in FY 2009-2010, 0.15% in FY 2010-2011, and –0.48% in FY 2011-2012. The reasons why the rate of return on invested

capital for FY 2011-2012 are that sales declined by 38% from the previous fiscal year even though the factory attained the similar level of production compared to the previous fiscal year, cost of goods manufactured largely exceeded sales, the government account of long term fixed capital increased a lot, and the turnover of long term fixed capital decreased.

Rates of return on invested capital in FY 2011-2012 for Japanese peer companies such as Daihatsu Diesel, Kobe Diesel, and Tohatsu (not listed) are 15.46%, 4.23%, and 8.56%, respectively (all non-consolidated basis). They have higher rates of return on invested capital compared to that of the Thargaya factory, which indicates they are more profitable than the factory. Turnover ratios of long-term fixed capital for those Japanese peers are over 120%, while their rates of return on income before interest and tax is about 6%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 7%, while the rate of return on income before interest and tax is negative due to a loss. This indicates that the factory's ratio of sales to long-term fixed capital is extremely low.

In addition, we simulated the factory's cost of imported raw materials and operating income using the market exchange rate in FY 2011-2012 (1Euro = 1,060 kyats) even though the official rate was used during that period. We found that the simulated operating loss hugely increased to 1,607.5 million kyats (estimated figure), while the factory reported a loss of 314.8 million kyats.

2. Growth potential

Sales in FY 2011-2012 (450 million kyats) decreased by 62% compared to sales in FY 2010-2011 (1,180 million kyats). We expect that the factory will continuously face price competition with cheap imports from abroad. The government is considering reducing the sales price by taking the market price into consideration. Thus, we expect that sales will decline even though the government demand is stable.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.2.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

   Production Department consists of 3 sections, and supervisors are assigned in each section. Workshop managers, assistant managers, and staff members are assigned under the supervisors.

2. Production plan

   MOI determines the amount of annual production, and factories are to manufacture products based on the amount of raw materials procured by MOI. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans.

3. Production technology (production efficiency)

   The factory manufactures products using the technology of a Chinese company, HND, who obtained technical licenses from German companies.

   There are 665 HND machines installed in the factory, and all of them are operable. There are 147 machines in Machine Factory (1), 89 machines in Machine Factory (2), 50 machines in Forge Factory, 130 machines in Foundry, 130 machines in Heat Treatment Factory, and 119 machines in Assembly Shop. However, numerous machines were idle in the factory, which indicates the low ratio of operation.

   Monthly sales per employee between FY 2009-2010 and 2011-2012 are low: 60,000 kyats, 190,000 kyats, and 70,000 kyats, respectively. Operating income for the same duration of 3 fiscal years is a consecutive loss. Thus, we think that production efficiency of the factory is very low.

4. Process management

   Based on the amount of production determined by MOI, the factory calculates the amount of raw materials necessary and asks MOI to procure raw materials. Products are manufactured according to the amount of available raw materials. The amount of available raw materials determines the amount of production. Hence, if raw materials are not readily available and are not procured enough, it will be difficult to maintain process management.

   The factory relies more than 90% of necessary parts on imports. For example, the factory requires 600 parts to manufacture diesel engines, of which the factory manufactures 67 parts and imports the rest from abroad such as China. It takes 3 months from the time of the order to the completion of diesel engine production. It takes 15 to 20 hours by truck to transport imported parts from Thilawa to the factory. It would

take about 6 months for the factory to complete production if raw materials cannot be obtained.

Moreover, some of the major raw materials such as iron (raw materials other than iron are partially used) and pit iron are imported from HND (a Chinese supplier) and from India, respectively. Sometimes, production is not finished as scheduled because procurement is disrupted due to a shortage of raw materials. The factory relies on HND in obtaining many of the raw materials required for production. Further, since the factory does not have knowledge of the contents of raw materials blended, the factory cannot find out alternative raw material procurement and production methodologies. Production gets delayed as a result.

In the case of raw materials shortage, factories can ask MOI for additional procurement. In case of an emergency, a general manager can order raw materials domestically. If orders were placed directly from the general manager, the factory needs to report it to MOI later.

Electric power supply is stable because power lines are laid nearby.

5. Work management

10 employees of the factory were selected as trainees and sent to China for 6 months for training. The trainees train factory employees, which standardizes work methods.

As far as medium-sized diesel engines are concerned, at full capacity, the factory can manufacture 9 to 11 engines per month with 2 shifts a day. However, the number of orders the factory receives is very low, so actual production is about 100 engines per year or 6 to 7 engines per month with 1 shift a day. According to the factory, the current rate of operation is about 50 to 60%. But we observed that more than half of the machines were not operated during the factory tour and consider that the actual rate of operation could be around 20 to 30% at the most. The factory uses new Chinese machines obtained in 2009; however, there were many unused machines, and the factory is not utilized efficiently.

Work methods are standardized. But the rate of operation is low; thus, there should be a demand issue to be addressed before improving work management.

6. Cost control

Trend of the breakdown of cost of goods manufactured between FY 2009-2010 and FY 2011-2012 is that material cost accounts for about a half of cost of goods manufactured. Labor cost accounts for about 20%, and utilities expense accounts for about 10%. Depreciation charge grew from 4% to 27% during these 3 fiscal years.

It may be required for the government to purchase factory products at a price set higher than the market price, i.e., “Cost + Price” in order to continue production. However, under the circumstance where the government requests the sales price should be set based on the market price, such a requirement seems difficult to fulfill because it is hard to pass the increased portion of the costs (e.g., raw material cost increase caused by the abolition of the official foreign exchange rate in April 2012) on to the sales price.

7. Equipment management / work environment

The factory is established in 2009 and is considered quite new. Thus, equipment management and work environments are good. We think that there is room to consider a factory sale to the private sector.

As far as equipment layout and line formation are concerned, many machines are sparsely placed in the factory, and we do not think that production efficiency is well considered.

5.2.2.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

Diesel engines manufactured at the factory are not sold to the private sector; hence, their products are not distributed in the market. Used Japanese diesel engines are popular in the market, but they are expensive. Therefore, cheap Chinese diesel engines are sold in the market.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells diesel engines to Ministry of Defense, Ministry of Transportation, and Navy. They have only government clients and do not sell products in the market. The factory does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

3. Operating structure of distribution department, customer management

The factory directly ships out its products to government agencies. Transportation expense is high as the factory does not have a location advantage. They only have a few clients, do not sell a lot of products, and do not have any discretion to change or increase the number of clients and / or products. Therefore, we do not think that they are in the position to require customer management.

4. Cooperation with external entities (wholesale, retail)

Since the factory sells its products to government agencies directly, there is no cooperation with external entities regarding wholesale and retail operations.

5.2.2.6 Issues

Based on the findings of the research, the following issues can be raised:

Management:

- There is no demand for the factory's products in the market, and their products are not competitive. It is difficult to expand their market share under the liberalized market.
- Sudden increase in government demand cannot be anticipated. It is difficult to achieve volume efficiency and improve price competitiveness by transitioning from a current small manufacturing operation to a large manufacturing operation.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- Profitability (the rate of return on invested capital) of the factory is much lower than those of Japanese competitors. Especially, the rate of return on invested capital for FY 2011-2012 is negative. Their products are low quality and facing fierce price competitions with imported products; hence, they cannot compete. Furthermore, we expect that the amount of loss will largely increase in the future because the cost of imported raw materials will rise sharply due to the abolition of the official foreign exchange rate in April 2012. It is very difficult to expect improvement in profitability.
- With regard to growth (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to increase; thus, it is difficult to anticipate improvement in operating income.

Production:

- The factory uses the technology of a Chinese company that obtained technical licenses from German companies and manufactures diesel engines with knockdown operations. Under the current setup, it is difficult to alter the procurement system of raw materials and parts and / or modify design or specs of their products. Therefore, it is difficult for the factory to reduce cost.
- The factory highly depends on abroad in obtaining necessary raw materials and parts. Production schedule gets postponed due to procurement shortfalls and delays.
- Compared to the size and operating capacity of the factory, actual demand for production is very low. Thus, the rate of operation is low, and the factory is inefficiently run.
- Production schedule gets delayed as the factory does not have information on the contents of blended raw

materials and on ways to procure alternative materials and produce substitute materials.

- It may be required for the government to purchase factory products at a price set higher than the market price, i.e., "Cost + Price" in order to continue production; however, such a requirement seems difficult to fulfill.

Distribution:

- Since the factory is situated in the inland area, it has no location advantage and transportation cost is high. It is tough to reduce costs.
- Their clients are government agencies only, and the factory is not able to independently formulate marketing and sales strategies. Thus, they cannot manufacture products that meet the market needs and are missing out on opportunities to generate additional earnings.

Pictures Taken at the Thargaya Factory in November 2012

5.2.3 Heavy Industries (1) Factory #16 (Agricultural Equipment; Sinde)

We visited the factory #16 (Agricultural Equipment in Sinde) on November 12, 2012 and conducted and interview and factory tour. Points of our observation are as follows:

- As far as core products of power tillers are concerned, competition with imports from China is intensifying.
- The factory is devising ways to effectively utilize their current facilities by producing container trains and automobile parts for the factory #12 in Htonebo.
- Decline in production capability is feared due to outdated casting equipment that is also used to manufacture parts for other factories.
- With the abolition of the official foreign exchange rate in April 2012, a steep rise in the cost of imported raw materials likely deteriorates the factory's profitability.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below:

5.2.3.1 Overview of the Factory

Factory #16 under Heavy Industries Enterprise (1) is an agricultural equipment plant in Sinde (about 272km north of Yangon) that is situated on the opposite shore of the town of Pyay along the Irrawaddy River. The factory manufactures power tillers, pumps for agricultural usage, metal blades for hoes, and so on. Moreover, using the casting equipment, the factory manufactures not only agricultural machinery parts, but also kiln sections for cement factories, parts for chemical facilities, flywheel housing to be exported to Japan, etc. The factory also manufactures container trains in recent years.

The number of employees is 1,030, of which 45 people are officers above assistant managers.

Further, the factory is in the inland area away from the coastal regions, situated in the west bank of the Irrawaddy River, and has little location advantage.

5.2.3.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

Under General Manager and Deputy General Manager, there are Planning, Administration, Finance, Production, and Quality Control Departments. 8 Assistant General Managers are assigned in Planning, Administration, Finance, and Production. Managers supervise relatively small Quality Control. 4 other departments have Assistant General Managers, under which 3 to 6 sections are overseen by 15 managers.

3. Management's decision making process

Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

MOI determines the amount of production, suppliers, and distributors and procures raw materials, parts, and fuel. The factory manufactures agricultural equipment and other products using the materials procured by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

General Manager has been engaged in related government operations in the past 19 years. Personnel with adequate experience in factory operation is assigned as a factory manager.

6. Management ethics

MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations. Slogans on agricultural equipment production activities were posted in many parts of the factory.

7. Business plan

MOI determines the amount of annual production based on demand. Factories will not create business plans.

8. Public nature of the business (provision of employment opportunities)

Most of 1,030 employees and their families live in factory dorms. About 120 employees were hired in the neighborhood of Sinde and commute by bus and other transportation means. The degree of contribution toward employment generation is quite limited.

9. Market share, competition environment with private sector companies

The agricultural equipment market in Myanmar is dominated by imported products from China, Thailand, India, etc. For instance, we visited agricultural equipment trade firms in Mandalay and found that they sell 22,000 to 23,000 imported power tillers from China and other countries annually. Power tillers are the Sinde factory's core products. However, the factory manufactures about 900 power tillers per year, and we assume that the factory's market share is lower than several percent. Competition with Chinese imports is intensifying. The factory's power tillers are sold for 1.2 million kyats, while competing Chinese power tillers (Good Brother brand) are sold for 1.8 million kyats. We later confirmed in the town of Pyay that the price of the Chinese product is about 1.2 million kyats, the same as the price of the factory product and consider that the share of Chinese products is increasing. Most power tillers sold in shops in Pyay and Mandalay City are Chinese, and we did encounter any factory made power tillers. Sales strategy of wholesale and retail divisions of private sector companies seems to prove efficient.

5.2.3.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 3 years are 7.22% in FY 2009-2010, 13.98% in FY 2010-2011, and 12.22% in FY 2011-2012. The reason why the rate of return on invested capital for FY 2010-2011 largely increased is that sales increased significantly by 49% compared to the last fiscal year.

Rates of return on invested capital in FY 2011-2012 for Japanese peer companies such as Iseki, Takakita, and Yanmar (not listed) are 2.80%, 9.14%, and 4.48%, respectively (all non-consolidated basis). They have lower rates of return on invested capital compared to that of the Sinde factory, which indicates they are less profitable than the factory. Turnover ratios of long-term fixed capital for those Japanese peers are over 125%, while their rates of return on income before interest and tax is between 2% and 6%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 50%, while the rate of return on income before interest and tax is about 23%. This indicates that the factory's ratio of sales to long-term fixed capital is low,

whereas the ratio of income before interest and tax to sales is high.

In addition, we simulated the factory's cost of imported raw materials and operating income using the market exchange rates in FY 2011-2012 (1Euro = 1,060 kyats and 1USD = 800 kyats) even though the official rates were used during that period. We found that the simulated operating income turned to a loss of 1,241.7 million kyats (estimated figure), while the factory reported a profit of 495.6 million kyats.

2. Growth potential

Sales in FY 2011-2012 (3,718 million kyats) decreased by 29% compared to sales in FY 2010-2011 (5,230 million kyats). We expect that the factory will continuously face price competition with cheap imports from abroad such as China. Thus, even if the government demand is stable, we expect that sales price will decline and sales will decrease as a result.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.3.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

Production Department has 5 sections, and each section has a manager under the supervision of Assistant General Manager.

2. Production plan

MOI determines the amount of annual production, and factories are to manufacture products based on

the amount of raw materials, parts, and fuel procured by MOI. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans.

3. Production technology (production efficiency)

The factory manufactures many parts using their own casting equipment, while they import raw materials, rubber products such as bearings and tyres, injections, nozzles, air cleaners, and others. In addition to agricultural equipment, the factory manufactures parts used for other factories such as molds, foundry pieces, and press works. Decline in production capability is feared due to outdated casting equipment.

Monthly sales per employee between FY 2009-2010 and 2011-2012 are 0.29 million kyats, 0.42 million kyats, and 0.30 kyats respectively.

Out of the Heavy Industries Enterprise (1) factories selected for research, the Sinde factory comes in the second place for this monthly sales figure.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials, parts, and fuel necessary and asks MOI to procure them. Products are manufactured according to the amount of available raw materials, parts, and fuel. The amount of available materials determines the amount of production. Hence, if necessary materials are not readily available and are not procured enough, it will be difficult to maintain process management.

The factory does not directly import raw materials, bearings, rubber parts, injections, nozzles, air cleaners, and other parts from suppliers, but purchases them via trade firms in Myanmar. For example, iron is purchased from a trade company in Myanmar, and fuel is procured from Ministry of Energy. Moreover, the factory imports bearings from China and India, and imports injections, nozzles, and air cleaners from China, respectively.

Since a lot of the process relies on manual work and the amount of production is very low (900 in FY 2011-2012), it is difficult to achieve volume efficiency and improve price competitiveness. Demand for the factory's products is limited. There are many machines that are left idle, and we consider that the factory does not utilize their production capacity fully.

5. Work management

Work methods seem to be standardized; however, the rate of operation is low and there should be a demand issue to be addressed before improving work management.

6. Cost control

Trend of the breakdown of cost of goods manufactured in FY 2011-2012 is that material cost accounts

for the majority of 65%. Labor cost accounts for about 18%, followed by utilities expense of about 18%.

We are concerned about a huge increase in the cost of raw materials including the cost of parts due to the change of foreign exchange rate from the official rate to the market rate in FY 2012-2013. We anticipate that the factory's profitability will be largely lowered by the steep rise in the cost of raw materials based on USD and Euro.

7. Equipment management / work environment

Though there are Chinese machinery installed in the late 2000's, a lot of production equipment in use since the 1970's is outdated. Further, demand for the factory's products is limited, and many machines are not operated overall. On the other hand, the factory is devising ways to effectively utilize their current facilities by producing container trains and automobile parts for the factory #12 in Htonebo. We occasionally came across with employees wearing sandals only and without helmets in the factory and consider that work environment is not necessarily appropriate from a safety and health perspective.

5.2.3.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

The agricultural equipment market in Myanmar is dominated by imported products from China, India, Thailand, and other countries. As far as the factory's core product of power tillers are concerned, Chinese products are strong. We observed that a large number of Chinese power tillers are sold at a price between 1.2 million and 1.3 million kyats at retailers / wholesalers in Pyay and Mandalay. We expect that demand for agricultural equipment will be on the rise from an agricultural promotion perspective.

2. Marketing / sales strategy, sales plan

A lot of agricultural equipment manufactured at the Sinde factory is sold to farmers through local / division governments. Actual sales of core power tillers are 913 units in FY 2011 – 2012, and products are sold in installments. Breakdown of the sales is about 700 units for Irrawaddy Division, about 100 units for Rakhine State, and about 100 units for Bago Division. Annual production capacity for power tillers is 1,200. Division governments sell power tillers purchased from the Sinde factory to farmers in installments. Order trend is stable.

Competition with Chinese imports is intensifying. The factory recognizes that there is not much of a

difference in quality between their products and private sector products; however, there is a wide gap in the degree of product penetration in the market. Chinese companies and their distributors proactively market their products on the sales ground. On the contrary, there is no showroom or wholly-owned outlet for the factory products, and their means of marketing is mainly limited to TV commercials.

3. Operating structure of distribution department, customer management

The factory delivers products mainly to local governments. In the case of breakdown of the machinery they sold, mostly personnel of Production Department repair. Usually the factory charges for parts only and does not ask for a service fee (labor charge). Also, no charge is basically applied for repairs within 6 months of purchase. Repair requests tend to concentrate in two harvest periods of the year.

4. Cooperation with external entities (wholesale, retail)

Since the factory sells its products to local governments directly, there is no cooperation with external entities regarding wholesale and retail operations.

5.2.3.6 Issues

Based on the findings of the research, the following issues can be raised:

Management:

- The agricultural equipment market in Myanmar is dominated by imported products from China, Thailand, India, etc. We assume that the factory's market share is lower than several percent, and agricultural equipment is not considered to be highly public.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- With regard to growth (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to increase; thus, it is likely that profitability will worsen.

Production:

- Since a lot of the process relies on manual work and the amount of production is very low (900 in FY 2011-2012), it is difficult to achieve volume efficiency and improve price competitiveness.
- Demand for the factory's products is limited. There are many machines that are left idle, and we consider that the factory does not utilize their production capacity fully.
- Decline in production capability is feared due to outdated casting equipment that is also used to manufacture parts for other factories.

Distribution:

- Compared to competing Chinese imports, there is a wide gap in the degree of product penetration in the market. Chinese companies and their distributors proactively market their products on the sales ground. On the contrary, there is no showroom or wholly-owned outlet for the factory products, and their means of marketing is mainly limited to TV commercials.

Pictures Taken at the Sinde Factory in November 2012

5.2.4 Heavy Industries (2) Factory #22 (Radial Tyres; Belin)

We visited the factory #22 (Radial Tyres in Belin) on November 14, 2012 and conducted an interview and factory tour. Points of our observation are as follows:

- Amid the ongoing market liberalization, factory products cannot compete with imports as well as domestic products in terms of product quality, and sales price and revenues decline
- Demand for their products is low as they do not manufacture sizes of tyres that the market demands
- It is difficult to achieve volume efficiency and improve price competitiveness by transitioning from a current small manufacturing operation to a large manufacturing operation
- It may be required for the government to purchase factory products at a price set higher than the market price, i.e., "Cost + Price" in order to continue production; however, such a requirement seems difficult to fulfill.
- Since the facility is new, it is possible to consider a lease / JV with a private partner or full privatization.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.4.1 Overview of the Factory

Factory #22 under Heavy Industries Enterprise (2) is a radial tyre plant that started production in 2010. The factory started operations with a Chinese loan in the amount of 33 million USD and with technical assistance from a company called China CAMC Engineering Co., Ltd. (hereafter called "CAMC").

Factory's main products are 12 different kinds of radial tyres. According to the factory, they are planning to sell 5 new kinds of tyres in FY 2013-2014. They are producing rubber hoses for water and oil uses, but they have not yet sold them as they are still conducting market research. Once MOI approves the sale of such hoses, they will start sales in 2013; however, the enterprise mentioned that they are still researching prospects. Moreover, the factory manufactures not only finished goods (radial tyres), but also semi-finished tyre products and receives fees for contract manufacturing. This kind of contract manufacturing is generally called CMP (Cutting, Making and Packing) in Myanmar. Under this CMP, the factory receives raw materials for free from a private Myanmar company, manufactures semi-finished tyre products, and receives fees for manufacturing the products.

The number of employees is 542 (45 officers and 497 other employees). Although the factory can hire up to a maximum of 873 people (70 officers and 803 other employees), it does not have to hire that many employees since the factory is not in full production.

Further, the factory is located about 125km east of Yangon. There are natural rubber plantations near the factory; thus, the location is highly convenient in terms of procuring rubber materials.

5.2.4.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

   MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

   Under General Manager and Deputy General Manager, there are Planning, Administration, Finance, Production, and Quality Control Departments. Except for Quality Control Department where managers and staff members are assigned, assistant general managers, managers, and staff members are assigned in each department.

3. Management's decision making process

   Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

   MOI determines the amount of production, suppliers, and distributors and procures raw materials. The factory manufactures radial tyres using the raw materials procured by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

   Factory's General Manager previously worked as General Manager of another factory under MOI. It can be said that personnel with production management experience is assigned as a factory manager.

6. Management ethics

   MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations.

7. Business plan

MOI determines the amount of annual production and creates plans for new products if MOI deems they are viable. Factories are expected to manufacture products based on the amount of raw materials provided and will not create business plans.

8. Public nature of the business (provision of employment opportunities)

Currently, 542 employees work in the factory and half of them live in factory dorms. The other half commute from the town of Belin, and the factory provides shuttle busses for those workers. In the closed economy, this factory was established with a goal of strengthening employment opportunities and industrializing the countryside. However, the factory has lost its significance as the market is now more liberalized than ever before and consumers are able to purchase imported products with better quality that suit their needs.

9. Market share, competition environment with private sector companies

Radial tyres manufactured at this factory were sold to government agencies such as Ministry of Defense and one wholesale distributor called Shwe Thang Lwin (hereafter called "STL") till FY 2012-2013 (In November 2012, STL requested to cancel the wholesale contract). The tyre market is dominated by imports from Thailand, India, China, Vietnam (all private companies) and products manufactured by domestic private corporations.

With the relaxation of the used car import regulation in September of 2011 led to a big surge in the number of imported used cars in Myanmar and to the increase in demand of tyres in the market. Some consumers purchase expensive high quality Japanese tyres. But most consumers buy cheaper imported tyres from Thailand, India, China, and Vietnam. Additionally, domestic tyre manufacturers such as Yangon Tyre (tyres for passenger automobiles) and Myanmar Tyre and Rubber (tyres for trucks) entered the market, and the market is becoming highly competitive. On the other hand, the factory does not manufacture the size of tyres used for relatively new, used Japanese imported cars which dominate the used car market. Thus, the demand for factory made tyres is low. Their tyres are sold in the market, but their market share is extremely low and their products are not competitive. The factory expects that the demand for their tyres will be larger as the number of used imported cars increases in the future.

Additionally, according to the enterprise, they are reviewing JV opportunities with several Myanmar private companies as of January 2013. The factory does not have know-how in manufacturing, procuring cheaper raw materials, and marketing; however, private companies show interests in cooperation with the factory since the factory's facility is new.

5.2.4.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 2 years are extremely low: 2.28% in FY 2010-2011 and 1.97% in FY 2011-2012, respectively. The reason why the rate of return on invested capital for FY 2011-2012 declined even though sales for the same fiscal year increased is that cost of goods manufactured more than doubled compared to the previous fiscal year. A sudden increase in cost of goods manufactured is caused by the steep rise in material and depreciation costs.

Rates of return on invested capital in FY 2011-2012 for Japanese peer companies such as Bridgestone, Sumitomo Rubber Industries, Yokohama Rubber Company, and Toyo Tyre are 3.65%, 5.34%, 4.15%, and 3.27%, respectively (all non-consolidated basis). They have higher rates of return on invested capital compared to that of the Belin factory, which indicates they are more profitable than the factory. Turnover ratios of long-term fixed capital for most of those Japanese peers are over 100%, while their rates of return on income before interest and tax is about 4%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 7%, while the rate of return on income before interest and tax is about 27%. This indicates that the factory's ratio of sales to long-term fixed capital is extremely low, whereas the ratio of income before interest and tax to sales is high.

In addition, we simulated the factory's cost of imported raw materials and operating income using the market exchange rate in FY 2011-2012 (1USD = 800 kyats) even though the official rate was used during that period. We found that the simulated operating income turned to a loss of 351.6 million kyats (estimated figure), while the factory reported a profit of 273.5 million kyats.

2. Growth potential

Sales in FY 2011-2012 (1,450 million kyats) increased by 72% compared to sales in FY 2010-2011 (840 million kyats). We expect that the factory will continuously face price competition with cheap imports from abroad. Moreover, the government is considering reducing the amount of production in order not to make a loss and selling inventories while giving up on importing necessary raw materials in FY 2012-2013. Thus, we expect that sales will drastically decline. In addition, if the enterprise faces serious challenges in selecting the next wholesale distributor(s) in place of STL, we also expect that sales will decrease even though the factory receives more in CMP fees and the government demand is stable.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.4.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

Production Department has 4 sections, and each section has Assistant General Manager and Manager. Under those managers, staff members are assigned. More than 70% of factory employees are assigned in Production Department.

2. Production plan

MOI determines the amount of annual production, and factories are to manufacture products based on the amount of raw materials procured by MOI. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans. Annual production capacity is 300,000 units, but the actual amount of production was 26,000units for FY 2010-2011 and 55,000 units for FY 2011-2012, respectively.

3. Production technology (production efficiency)

Most of the machines used in the factory are Chinese. There are 230 kinds of machines, and all 352 machines are operable. The factory uses a Japanese machine (Dynamic Balancer) to conduct final inspections as such checks require high quality machinery. However, there are many unused machines in the factory, and the rate of operation is low.

Monthly sales per employee in FY 2010-2011 and FY 2011-2012 are low: 170,000 kyats and 230,000 kyats, respectively. Monthly operating income for the same duration is 50,000 kyats and 40,000 kyats, respectively. Thus, we think that production efficiency of the factory is very low.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials necessary and asks MOI to procure raw materials. Products are manufactured according to the amount of available raw materials. The amount of available raw materials determines the amount of production. Hence, if raw materials are not readily available and are not procured enough, it will be difficult to maintain process management.

Main raw materials are rubber (natural and synthetic) and additives such as carbon. Only 4 products such as natural rubber and part of additives can be procured domestically. The factory relies on importing over 90% of raw materials (synthetic rubber and other additives) or 42 items from one company, CAMC. Therefore, the factory faces a huge procurement risk. It takes about a month from the time of the order of raw materials to the delivery of materials to the factory.

Additionally, imported raw materials are delivered as a mixed form. Since the factory does not have knowledge of the ratio of raw materials blended, the factory cannot find out alternative raw material procurement and production methodologies. Production gets delayed as a result. Procurement is done usually once a year, and the amount of procured raw materials depends on the amount of foreign currencies the government possesses.

90% of production is classified as Grade A, 7% is classified as Grade B, and 3% is classified as Grade R (rejected). Grade A products are sold to clients, while the factory does not have any decision making power regarding sales of Grade B products. Grade R products are not used for motor vehicles, but used for locally used vehicles. Electric power supply is not stable, and there are usually 5 blackouts per month ranging from 10 – 15 minutes to several hours of electric service interruptions. Many Grade R products are the ones affected by such power outages. As far as production and inspection process is concerned, the factory has a section where many employees manually shape and check tyres one by one. The factory automation seems halfway.

5. Work management

Chinese trainers from CAMC stayed at the factory and trained some factory employees for one year. The factory created a manual base on the CAMC manual. The factory manual is written in English, not in Myanmar, but factory trainers train workers in Myanmar language. Usually, it takes about one month for new recruits to acquire knowledge and skills on operations related to their assigned work. In this way, the factory trains factory workers and standardizes work methods.

As described above, through our factory tour, we saw that many machines were left idle and that a lot of work consisted of manual labor. As such, the factory's rate of operation is low, and the factory is not utilized efficiently.

Also, work methods are standardized. But the rate of operation is low; thus, there should be a demand issue to be addressed before improving work management.

6. Cost control

Breakdown of cost of goods manufactured between in FY 2011-2012 is that labor cost accounts for 33%, depreciation charge accounts for 27%, and material cost accounts for 22%.

It may be required for the government to purchase factory products at a price set higher than the market price, i.e., "Cost + Price" in order to continue production. However, under the circumstance where the government requests the sales price should be set based on the market price, such a requirement seems difficult to fulfill because it is hard to pass the increased portion of the costs (e.g., raw material cost increase caused by the abolition of the official foreign exchange rate in April 2012) on to the sales price.

7. Equipment management / work environment

The factory is established 2 years ago and is considered quite new. Thus, equipment management and work environments are good. We think that there is room to consider a factory sale to the private sector.

As far as equipment layout and line formation are concerned, many machines are sparsely placed in the factory, and we do not think that production efficiency is well considered.

5.2.4.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

Factory made tyres are sold in the market; however, the market is dominated by tyres imported from Thailand, India, China, and Vietnam. Tyres manufactured by domestic companies are sold in the market as well. Thus, the market share of the factory is extremely low.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells radial tyres to government agencies such as Ministry of Defense and to the market through a wholesale distributor (STL). The factory

does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

3. Operating structure of distribution department, customer management

The factory directly ships out its products to government agencies and STL, the private wholesale distributor. They are not in the position to require customer management for their government clients. But for the private wholesale distributor, we think that the factory needs to manage customers (their buying and inquiry history, for instance) so as to understand the market needs, conduct better marketing, and improve the level of customer satisfaction.

4. Cooperation with external entities (wholesale, retail)

Up until FY 2012-2013, the factory aligned with a private wholesale company, STL, and sales through STL accounted for 25% of total sales. However, STL asked to cancel sales contract in November 2012, and the enterprise was in the process of selecting a next wholesale distributor(s) and test-marketing products as of the end of January 2013. The factory does not have any alliance on retail sales.

5.2.4.6 Issues

Based on the findings of the research, the following issues can be raised:

Management:

- There is no demand for the factory's products in the market, and their products are not competitive. It is difficult to expand their market share under the liberalized market.
- Sudden increase in government demand cannot be anticipated. It is difficult to achieve volume efficiency and improve price competitiveness by transitioning from a current small manufacturing operation to a large manufacturing operation.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- Profitability (the rate of return on invested capital) of the factory is lower than those of Japanese competitors. The factory manufactures products that are not in demand and facing fierce price competitions with imported products; hence, they cannot compete. Furthermore, we expect that the amount of loss will largely increase in the future because the cost of imported raw materials will rise sharply due to the abolition of the

official foreign exchange rate in April 2012. It is very difficult to expect improvement in profitability.

- With regard to growth (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to increase; thus, it is difficult to anticipate improvement in operating income.

Production:

- The factory imports raw materials and parts from only one company, CAMC. At present, it is difficult for the factory to change the supplier of raw materials and parts. It is also hard to cut costs because the contents of blended raw materials are unknown and the factory has no knowledge of procuring alternative materials and producing substitute materials in the case of procurement disruptions.
- Compared to the size and operating capacity of the factory, actual demand for production is very low. Thus, the rate of operation is low, and the factory is inefficiently run.
- It may be required for the government to purchase factory products at a price set higher than the market price, i.e., "Cost + Price" in order to continue production; however, such a requirement seems difficult to fulfill.

Distribution:

- The factory is not able to independently formulate marketing and sales strategies. Thus, they cannot manufacture products that meet the market needs and are missing out on opportunities to generate additional earnings.

Pictures Taken at the Belin Factory in November 2012

5.2.5 Heavy Industries (3) Factory #31 (Wet Cement; Thayet)

We visited the factory #31 (Wet cement in Thayet) on November 11, 2012 and conducted an interview and factory tour. Points of observation are as follows:

- Amid the ongoing market liberalization and with fierce competitions with imported and domestic products, sales price is likely to decline.
- If a temporary easing of the procurement cost for offshore natural gas is terminated and the fuel cost is to enormously increase, it will be difficult for the factory to stay profitable.
- Facilities installed in the 1960's are outdated. Compared to stable and mass-produced imports from Thailand, the factory's cement has not earned high reputation in the market.
- Cement manufactured at the factory is used for public works and in the north where imports are quite expensive. The factory can keep a certain level of demand in the market.

Overview of the factory, observation on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.5.1 Overview of the Factory

Factory #31 under Heavy Industries Enterprise (3) is a wet cement plant that started production in 1937 with the assistance of the British government and reutilize the facilities. Silos laid at the time of the factory setup and pipelines laid from a gas field 12 miles (19.3km) away from the factory site are still in use. Most of the other facilities are provided by Japan in the 1960's and Chinese and domestic facilities are also installed in the late 2000's. The factory zone of 32.28 acres (0.13 square km) is situated in the site of 209.71 acres (0.84 square km) along the Irrawaddy River that is 2 miles (3.2km) away from the central town of Thayet.

3 cement plants with daily production capacity of 400 tons are in operation. With facilities used for transporting and processing raw materials, the factory manufactures cement with the wet process using Japanese machinery (Kawasaki Heavy Industries machinery operated since 1968), Chinese machinery (YTG form 1999), and domestic wet plant (operation from 2000).

Average annual production amount for the past 9 years is 126,000 tons, which is the second place out of the 3 Heavy Industries Enterprise (3) factories selected for research.

The number of employees also is the second biggest among the 3 factories under Heavy Industries Enterprise (3). Under General Manager, there are 5 departments. 836 employees work in the factory, of which 64 employees are officers above Assistant Managers.

5.2.5.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

   MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

   Under General Manager, there are Planning, Administration, Finance, Production, and Quality Control Departments. Deputy General Managers control Planning, Administration, Finance, and Production. A relatively small Quality Control is managed by Assistant General Manager. 4 other departments have Assistant General Managers, under which 3 to 4 sections are overseen by 15 managers.

3. Management's decision making process

   Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

   MOI determines the amount of production, suppliers, and distributors. The factory manufactures cement based on the amount of production determined by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

   General Manager has been engaging in cement production for many years and has adequate experience in cement production.

6. Management ethics

   MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations. Slogans on cement production activities were posted in many parts of the factory.

7. Business plan

MOI determines the amount of annual and monthly production based on demand. Factories will not create business plans.

8. Public nature of the business (provision of employment opportunities)

About 90% of 836 employees are from the local area, and the factory contributes to employment generation to a certain extent.

9. Market share, competition environment with private sector companies

A lot of cement manufactured at the Thayet factory is used for public works. Average sales for the past 9 years are 80% for government agencies, 3% for oil wells, 1% for society such as school and hospitals, and 17% for private sector clients. Demand for public works is large, but the market share is significantly big for imports and domestic private companies' products.

Demand for cement is rapidly growing as the economy develops in Myanmar. The cement market consists of good quality imports from Thailand, products manufactured by domestic private sector companies, and SOE products. Annual domestic cement demand is expected to be 5 million tons. Of which, 2.4 million tons are imported, 2 million tons are manufactured by domestic private companies, and 0.6 million tons are manufactured by 3 SOE factories. The market share of SOE factories is about 12%, but the share is declining with high quality cement imports from Thailand and entries of domestic private sector companies into the market. Furthermore, Thailand's Siam Cement is planning to construct a cement factory and 4 distribution outlets in Myanmar, and the price and product competition is increasingly fierce. Distributors in the market regard the quality of SOE cement is not stable compared to that of imported products, and reduction in sales price could be expected due to severe competitions.

However, SOE products are widely used for public works and a certain level of demand is expected in the northern market where imported products can be more expensive due to higher transportation cost. Hence, there is a possibility that the demand for SOE products will increase for public works projects and in the northern market. However, the northern area centered in Mandalay is quite far away from the Thayet factory; hence, compared to the Kyaukse factory located in the north, advantage over imported products is low.

5.2.5.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 2 years are 10.7% for FY 2010-2011 and 12.53% for FY 2011-2012, respectively. The main reason why the rate of return on invested capital in FY 2011-2012 increased compared to the previous fiscal year is that the turnover ratio of long-term fixed capital rose due to sales increase.

Rates of return on invested capital in FY 2011-2012 for Japanese peer companies such as Sumitomo Osaka Cement, Tokuyama Corporation, DC, and Ryuku Cement (not listed) are 3.16%, 3.94%, 5.91%, and 4.67%, respectively (all non-consolidated basis). They have lower rates of return on invested capital compared to that of the Thayet factory, which indicates they are less profitable than the factory due to their high-cost structure. Turnover ratios of long-term fixed capital for most of those Japanese peers are about 80%, while their rates of return on income before interest and tax is about 6%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 36%, while the rate of return on income before interest and tax is about 35%. This indicates that the factory's ratio of sales to long-term fixed capital is low, whereas the ratio of income before interest and tax to sales is high.

In addition, we simulated the factory's fuel cost (offshore natural gas cost) and operating income using the market exchange rate in FY 2011-2012 (1USD = 800 kyats) even though the official rate was used during that period. We found that the simulated operating income turned to a huge loss of 7,374.5 million kyats (estimated figure), while the factory reported a profit of 1,347.6 million kyats.

2. Growth potential

Sales in FY 2011-2012 (6.90 billion kyats) increased by 29% compared to sales in FY 2010-2011 (5.33 billion kyats). As demand for construction grows, demand for cement is expected to largely increase. However, it is expected that the factory will continuously face price competitions with imports. Moreover, if we assume that the currently applied (up until May of 2013) discounted fuel charge of 5 USD per million BTU will be raised to around 11 USD per million BTU in the future, fuel cost will increase enormously and the amount of production will decline. We think that it is quite significant for the factory to secure a certain level of demand for public works and meet demand in the competitive northern market. However, in order to achieve continuous factory operation, it is the major premise to receive stable supply of fuel at a reasonable cost.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories

are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.5.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

   Deputy General Manager controls Production Department. There are 3 sec3tions under Production, and of which 2 sections have Assistant General Managers, Managers, and staff members. The remaining section does not have Assistant General Manager, and Managers and staff members are assigned directly under Deputy General Manager. Employees working in Production account for about 55% of the total number of employees at full capacity.

2. Production plan

   MOI determines the amount of annual production, and factories are to manufacture products based on the amount decided. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans.

3. Production technology (production efficiency)

   Machinery under operation includes Japanese one (Kawasaki Heavy Industries' machines operation started in 1968), Chinese one (YTG's machinery operation started in 1999), and a domestic wet plant (operation started in 2000). The factory conveys limestone using a ropeway (3.6km in length) from the quarry site that is located southwest of the factory. Crushed limestone is further processed with other materials using a raw grinding mill (wet process). Then, clinker made through calcination using a rotary kiln is crushed finely with a cement grinding mill. Finished cement is packed in a 50kg bag and carried out of the factory.

   Even though the facilities are outdated, the factory manufactures cement with 2 shifts a day (7:00 - 16:00 and 16:00 - 23:00) while maintaining the machinery daily. Compared to stable and mass-produced cement imported from Thailand, quality of the factory's cement does not seem to be highly regarded in the market.

A ropeway used for conveying limestone is a bottleneck for production, and the factory can only manufacture the amount of cement below their production capacity. The ropeway has a capability to convey 800 tons of limestone per day; however, it can actually convey only 500 tons per day. There used to be 120 buckets (capacity of 0.7 ton per bucket) for conveyance available at first, but now the number of buckets decreased to 100. The factory conducted a large scale repair in 1982 and has been using the ropeway; however, it broke in June 2012. They undertook an emergency repair and refrain from operating it at full capacity. Improvement requires an additional investment.

Monthly sales per employee between FY 2009-2010 and FY 2011-2012 are 790,000 kyats, 520,000 kyats, and 690,000 kyats, respectively. These figures are the lowest of the 3 factories we surveyed.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials. Products are manufactured according to the amount of available raw materials and fuel, and the amount of available materials determines the amount of production. Hence, if necessary materials are not readily available and are not procured enough, it will be difficult to maintain process management.

There is no problem in procuring a main raw material of limestone. The quarry is located 4.5km southwest of the factory and has a reserve of 44.2 million tons, which is worth about 108 years of consumption amount based on the annual consumption of 410,000 tons.

Obtaining fuel (natural gas) is a big issue. The factory used to use inland natural gas. However, output of inland natural gas is largely declining, and the factory is shifting its usage of fuel from inland to offshore natural gas from FY 2011-2012. Although the amount of cement production is not lowered significantly, usage of expensive offshore natural gas is a factor to increase the factory's manufacturing cost.

5. Work management

Manuals are used to train employees to standardize work methods. Of 3 cement factories under research, the Thayet factory was established first and manages production by utilizing long years of experience of veteran managers.

Distributors in the market regard that the quality of cement manufactured by SOE factories is not stable and that the weight per bag is not constant. While manuals for work methods are available, improvement is needed in terms of quality control.

6. Cost control

Breakdown of cost of goods manufactured in FY 2011-2012 is that fuel cost accounts for the majority of 58%, raw material cost accounts for 37%, and other cost accounts for 5%.

The factory used inland natural gas as main fuel before, but they shifted the kind of natural gas to use

from inland to mostly offshore in the middle of FY 2011-2012. Inland natural gas is for domestic use and consumed in Myanmar; thus, the cost is settled in kyat. On the other hand, offshore natural gas is exported to countries such as Thailand, and procurement is settled in USD. Purchase price is discounted and set temporarily (till May 2013) at 5 USD per million BTU that is less than a half of the market price of about 11USD per million BTU. If this temporary discount measure is ended and the fuel cost is to rise immensely, we think that it will be difficult for the factory to control cost and maintain profitability.

7. Equipment management / work environment

Facilities established in the 1960's are outdated, but the factory repairs machinery using limited parts as much as possible to maintain the level of operation in accordance with the production plan. We occasionally came across with employees wearing sandals only and without helmets in the factory and consider that work environment is not necessarily appropriate from a safety and health perspective.

5.2.5.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

SOE factories manufacture 600,000 tons of cement in total annually. Domestic private sector companies manufacture 2 million tons of cement per year, and Myanmar imports 2.4 million tons from Thailand. The Thayet factory manufactured 124,000 tons of cement in FY 2011-2012, which is estimated to account for about 2.5% of the market share.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells cement to government agencies and the market. The factory does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

3. Operating structure of distribution department, customer management

75% of cement packed in 50kg bags is first shipped to the town on the other side of the Irrawaddy River and then transported by land to cities like Naypyitaw and Yangon. The other 25% is directly transported to Mandalay by ship, and it takes about 5 days to go up the river.

They are not in the position to require customer management for their government clients. But for the

private wholesale distributor, we think that the factory needs to manage customers (their buying and inquiry history, for instance) so as to understand the market needs, conduct better marketing, and improve the level of customer satisfaction.

4. Cooperation with external entities (wholesale, retail)

Most of the sales are with government agencies, and it does not seem that the factory has large distribution contracts with private sector companies directly. We observed that cement manufactured at SOE factories were sold in multiple wholesale and retail outlets in Yangon and Mandalay.

5.2.5.6 Issues

Based on findings of the research, the following issues can be raised:

Management:

- As demand for construction grows, demand for cement is expected to increase. But at the same time, quality of SOE cement is not stable compared to that of imported and domestic products. Thus, the factory has to keep their product competitiveness by competing in terms of price, sales area (such as the northern market), and public works.
- If a temporary discount measure of the offshore natural gas price is ended and the fuel cost is to rise immensely, it will not be easy for the factory to stay competitive.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- With regard to growth (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to increase if the fuel cost rises; thus, operating income can be expected to decrease or be negative.

Production:

- The factory's cement lacks product competitiveness against imported products as the factory manufactures cement using the outdated facilities built in the 1960's.
- A ropeway used for conveying limestone is a bottleneck for production, and the factory can only manufacture the amount of cement below their production capacity. They undertook an emergency repair of

the ropeway and refrain from operating it at full capacity. Improvement requires an additional investment.

Distribution:

- The factory is not able to independently formulate marketing and sales strategies. Thus, they cannot manufacture products that meet the market needs and are missing out on opportunities to generate additional earnings.

Pictures Taken at the Thayet Factory in November 2012

5.2.6 Heavy Industries (3) Factory #32 (Wet Cement; Kyangin)

We visited the factory #32 (Wet cement in Kyangin) on November 15, 2012 and conducted an interview and factory tour. Points of observation are as follows:

- Amid the ongoing market liberalization and with fierce competitions with imported and domestic products, sales price is likely to decline.
- If a temporary easing of the procurement cost for offshore natural gas is terminated and the fuel cost is to enormously increase, it will be difficult for the factory to stay profitable.
- Facilities with operation history of 3 to 4 decades are outdated. Compared to stable and mass-produced imports from Thailand, the factory's cement has not earned high reputation in the market.
- Cement manufactured at the factory is used for public works and in the north where imports are quite expensive. The factory can keep a certain level of demand in the market.

Overview of the factory, observation on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.6.1 Overview of the Factory

Factory #32 under Heavy Industries Enterprise (3) is a wet cement plant that was established in FY 1970-1971 with the area of 7,697 acres (31.15 square km) including the main factory area of 145.5 acres (0.59 square km) and limestone quarry of 3,840 acres (15.54 square km).

The factory's cement production was expanded 3 times (new factory construction, factory expansion, and electric locomotive) in the 1970's and 1980's by installing equipment and facilities through yen loans. At first, 2 cement production equipment with daily production capacity of 400 tons were installed in FY 1975-1976. Next, 2 other cement production equipment with the same daily production capacity were added in FY 1980-1981. These facilities started operation in FY 1985-1986. Lastly, an electric locomotive was introduced to transport raw materials and finished products in FY 1986-1987.

Designed maximum amount of production is 480,000 tons per year, and the amount of planned production is 360,000 tons per year, which is the largest capacity among the 3 cement factories under Heavy Industries Enterprise (3). If the factory can receive a stable supply of fuel, they can achieve the designed maximum amount of production. In FY 2006-2007, the factory recorded annual production of about 420,000 tons.

The number of employees is the biggest among the 3 factories under Heavy Industries Enterprise (3). Under General Manager, there are 5 departments. 1,302 employees work in the factory, of which 81 employees are officers above Assistant Managers.

5.2.6.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

   MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

   Under General Manager, there are Planning, Administration, Finance, Production, and Quality Control Departments. Deputy General Managers control Planning, Administration, Finance, and Production. A relatively small Quality Control is managed by Assistant General Manager. 4 other departments comprise of 3 to 5 sections that are overseen by Assistant General Managers.

3. Management's decision making process

   Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

   MOI determines the amount of production, suppliers, and distributors. The factory manufactures cement based on the amount of production determined by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

   General Manager has been engaging in cement production for several decades and has adequate experience in cement production.

6. Management ethics

   MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations. Slogans on cement production activities were posted in many parts of the factory.

7. Business plan

MOI determines the amount of annual and monthly production based on demand. Planned production amount for FY 2012-2013 is 20,500 tons per month and 246,000 tons per year, respectively. Factories will not create business plans.

8. Public nature of the business (provision of employment opportunities)

About 40% of 1,302 employees live in factory dorms, and the other 60% commute from nearby towns. Factory employment contributes to job generation in the area to some extent.

9. Market share, competition environment with private sector companies

Cement manufactured at the Kyangin factory is mainly sold to government agencies for use in public works. 10% to 20% is sold to the market. Demand for cement is large for public works as well; however, the market share of imported and domestic products is significantly high to support private-sector demand.

Demand for cement is rapidly growing as the economy develops in Myanmar. The cement market consists of good quality imports from Thailand, products manufactured by domestic private sector companies, and SOE products. Annual domestic cement demand is expected to be 5 million tons. Of which, 2.4 million tons are imported, 2 million tons are manufactured by domestic private companies, and 0.6 million tons are manufactured by 3 SOE factories. The market share of SOE factories is about 12%, but the share is declining with high quality cement imports from Thailand and entries of domestic private sector companies into the market. Furthermore, Thailand's Siam Cement is planning to construct a cement factory and 4 distribution outlets in Myanmar, and the price and product competition is increasingly fierce. Distributors in the market regard the quality of SOE cement is not stable compared to that of imported products, and reduction in sales price could be expected due to severe competitions.

However, SOE products are widely used for public works and a certain level of demand is expected in the northern market where imported products can be more expensive due to higher transportation cost. Hence, there is a possibility that the demand for SOE products will increase for public works projects and in the northern market. However, the northern area centered in Mandalay is quite far away from the Kyangin factory; hence, compared to the Kyaukse factory located in the north, advantage over imported products is low.

5.2.6.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 2 years are 17.40% for FY 2010-2011 and 13.09% for FY 2011-2012, respectively. The main reason why the rate of return on invested capital in FY 2011-2012 decreased compared to the previous fiscal year is that the rate of return on income before interest and tax declined as sales increased by 10% while other indirect costs including fuel cost rose by 46%.

Rates of return on invested capital in FY 2011-2012 for Japanese peer companies such as Sumitomo Osaka Cement, Tokuyama Corporation, DC, and Ryuku Cement (not listed) are 3.16%, 3.94%, 5.91%, and 4.67%, respectively (all non-consolidated basis). They have lower rates of return on invested capital compared to that of the Kyangin factory, which indicates they are less profitable than the factory due to their high-cost structure. Turnover ratios of long-term fixed capital for most of those Japanese peers are about 80%, while their rates of return on income before interest and tax is about 6%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 30%, while the rate of return on income before interest and tax is about 44%. This indicates that the factory's ratio of sales to long-term fixed capital is low, whereas the ratio of income before interest and tax to sales is high.

In addition, we simulated the factory's fuel cost (offshore natural gas cost) and operating income using the market exchange rate in FY 2011-2012 (1USD = 800 kyats) even though the official rate was used during that period. We found that the simulated operating income turned to a huge loss of 11,161.2 million kyats (estimated figure), while the factory reported a profit of 5,173.3 million kyats.

2. Growth potential

Sales in FY 2011-2012 (19.1 billion kyats) increased by 10% compared to sales in FY 2010-2011 (17.4 billion kyats). As demand for construction grows, demand for cement is expected to largely increase. However, it is expected that the factory will continuously face price competitions with imports. Moreover, if we assume that the currently applied (up until May of 2013) discounted fuel charge of 5 USD per million BTU will be raised to around 11 USD per million BTU in the future, fuel cost will increase enormously and the amount of production will decline. We think that it is quite significant for the factory to secure a certain level of demand for public works and meet demand in the competitive northern market. However, in order to achieve continuous factory operation, it is the major premise to receive stable supply of fuel at a reasonable cost.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.6.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

Deputy General Manager controls Production Department. There are 4 sections under Production, of which, 2 sections are assigned with Assistant General Managers, General Managers, Managers, and staff members. The other 2 sections do not have Assistant General Managers and Managers and staff members are assigned directly under Deputy General Manager. Employees working in Production account for about 57% of the total number of employees at full capacity.

2. Production plan

MOI determines the amount of annual production, and factories are to manufacture products based on the amount decided. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans. The planned production for FY 2012-2013 is 20,500 ton per month or 246,000 tons per year. This production level is 20% lower than that of the last fiscal year; however, the actual production between April and October of 2013 (160,040 tons) exceeded the planned amount (143,500 tons) by about 12%.

3. Production technology (production efficiency)

Main machinery under operation includes Japanese wet plants installed by Kawasaki Heavy Industries in the 1970's and 1980's. Limestone mined at the quarry site located 5.5 miles (8.9km) south of the factory is

first crushed by a limestone crusher to the size of 150 cubic millimeters and sent to the factory with an electric locomotive. Crushed limestone is further processed with other materials using a raw grinding mill (wet process). Then, clinker made through calcination using a rotary kiln is crushed finely with a cement grinding mill. Finished cement is packed in a 50kg bag and carried out of the factory. Then, limestone that is crushed again to the size of 25 cubic millimeters is further processed with other materials using a wet process raw grinding mill (Kawasaki Heavy Industries machinery). Then, clinker made through calcination using a rotary kiln (also Kawasaki Heavy Industries machinery) is crushed finely with a cement grinding mill (Kobe Steel machinery). Finished cement is packed in a 50kg bag (using machinery of Kawasaki Heavy Industries) and carried out of the factory.

Even though the facilities are outdated, the factory operates 300 days a year and manufactures cement with 3 eight-hour shifts a day. Compared to stable and mass-produced cement imported from Thailand, quality of the factory's cement does not seem to be highly regarded in the market.

Monthly sales per employee between FY 2009-2010 and FY 2011-2012 are 1.33 million kyats, 1.11 million kyats, and 1.19 million kyats, respectively. These figures come in the second of the 3 factories under research.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials. Products are manufactured according to the amount of available raw materials and fuel, and the amount of available materials determines the amount of production. Hence, if necessary materials are not readily available and are not procured enough, it will be difficult to maintain process management.

There is no problem in procuring a main raw material of limestone. The Htone Taung quarry is located 5.5 miles (8.9km) south of the factory and has a reserve of 56.6 million tons of limestone in the area of 3,840 acres (15.54 square km). There are backup quarries in 2 miles (3.2km) south and 8 miles (12.9km) southwest of the quarry. The amount of reserve is estimated to be 11 million tons for the former quarry, but not known for the latter.

Obtaining fuel (natural gas) is a big issue. The factory used inland natural gas for more than 30 years since inception. However, output of inland natural gas is largely declining, and the factory is shifting its usage of fuel from inland to offshore natural gas from FY 2010-2011. Although the amount of cement production is not lowered significantly, usage of expensive offshore natural gas is a factor to increase the factory's manufacturing cost.

5. Work management

Manuals are used to train employees to standardize work methods. Of 3 cement factories under research, the Kyangin factory is the largest one and manages production by utilizing long years of experience of

veteran managers.

Distributors in the market regard that the quality of cement manufactured by SOE factories is not stable and that the weight per bag is not constant. While manuals for work methods are available, improvement is needed in terms of quality control.

6. Cost control

Breakdown of cost of goods manufactured in FY 2011-2012 is that fuel cost accounts for the majority of 63%, raw material cost accounts for 28% and other cost accounts for 9%.

The factory used inland natural gas as main fuel before, but they shifted the kind of natural gas to use from inland to mostly offshore in September 2010. Inland natural gas is for domestic use and consumed in Myanmar; thus, the cost is settled in kyat. On the other hand, offshore natural gas is exported to countries such as Thailand, and procurement is settled in USD. Purchase price is discounted and set temporarily (till May 2013) at 5 USD per million BTU that is less than a half of the market price of about 11USD per million BTU. If this temporary discount measure is ended and the fuel cost is to rise immensely, we think that it will be difficult for the factory to control cost and maintain profitability.

7. Equipment management / work environment

Facilities established in the 1970's and 1980's are outdated, but the factory repairs machinery using limited parts as much as possible to maintain the level of operation in accordance with the production plan. We occasionally came across with employees wearing sandals only and without helmets in the factory and consider that work environment is not necessarily appropriate from a safety and health perspective.

5.2.6.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

SOE factories manufacture 600,000 tons of cement in total annually. Domestic private sector companies manufacture 2 million tons of cement per year, and Myanmar imports 2.4 million tons from Thailand. The Kyangin factory manufactured 356,000 tons of cement in FY 2011-2012, which is estimated to account for about 7% of the market share.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells cement to government agencies and the market. The factory does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

3. Operating structure of distribution department, customer management

They are not in the position to require customer management for their government clients. But for the private wholesale distributor, we think that the factory needs to manage customers (their buying and inquiry history, for instance) so as to understand the market needs, conduct better marketing, and improve the level of customer satisfaction.

4. Cooperation with external entities (wholesale, retail)

Most of the sales are with government agencies, and it does not seem that the factory has large distribution contracts with private sector companies directly. We observed that cement manufactured at SOE factories were sold in multiple wholesale and retail outlets in Yangon and Mandalay.

5.2.6.6 Issues

Based on findings of the research, the following issues can be raised:

Management:

- As demand for construction grows, demand for cement is expected to increase. But at the same time, quality of SOE cement is not stable compared to that of imported and domestic products. Thus, the factory has to keep their product competitiveness by competing in terms of price, sales area (such as the northern market), and public works.
- If a temporary discount measure of the offshore natural gas price is ended and the fuel cost is to rise immensely, it will not be easy for the factory to stay competitive.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- With regard to growth (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to increase if the fuel cost rises; thus, operating income can be expected to decrease or be negative.

Production:

- The factory's cement lacks product competitiveness against imported products as the factory manufactures cement using the outdated facilities with an operation history of 3 to 4 decades.

Distribution:

- The factory is not able to independently formulate marketing and sales strategies. Thus, they cannot manufacture products that meet the market needs and are missing out on opportunities to generate additional earnings.

Pictures Taken at the Kyangin Factory in November 2012

5.2.7 Heavy Industries (3) Factory #33 (Dry Cement; Kyaukse)

We visited the factory #33 (Dry Cement in Kyaukse) on December 13, 2012 and conducted an interview and factory tour. Points of our observation are as follows:

- Amid the ongoing market liberalization and fierce competition with imported and domestic products, sales price could go down.
- If inland natural gas the factory is currently using becomes unavailable from FY 2013-2014, they can use coal as an alternative fuel and continue production without a large amount of additional investment.
- The factory has a location advantage in terms of proximity to the market and coal complex. However, there is a possibility that the sales price could be set higher than that of the private sector companies in case of changing the fuel from inland natural gas to coal, and it is hard to stay competitive in terms of price.
- Product competitiveness is low compared to imported products because product quality is inferior to that of imports. But cement manufactured by the factory is used for public works and in the north where imports are quite expensive, and the factory can keep a certain level of demand in the market.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.7.1 Overview of the Factory

Factory #33 under Heavy Industries Enterprise (3) is a dry cement plant that started production in 2003 with technical assistance from China National Constructional & Agricultural Machinery Import & Export Corporation (hereafter called "CAMC"). The amount of investment is 16.5 million USD (calculated to be 160 million kyats with the official exchange rate used at that time) and 6.3 billion kyats, which amounts to a total of 6.4 billion kyats.

The factory site covers an area of 684.62 acres and is located at 300 feet above sea level. The height of limestone is 930 feet. The height of the limestone quarry used to be 780 feet, but now it is 730 feet. The quarry is located near the factory (about 1 kilometer away), and limestone is carried via belt conveyors. The amount of limestone is estimated to be 70 million tons. There are 5 private cement companies (including MEC, Myanmar Economic Corporation) around the factory and they quarry from the same limestone quarry site. The factory estimates the duration of quarry is about 300 years. The factory #33 quarries 100,000 tons of limestone annually.

The number of employees is 294 (48 officers and 246 other employees). The factory can hire up to a maximum of 666 people.

Further, the factory is in the inland area situated about 40km south of Mandalay. The area is close to limestone and the northern market; thus, the factory's location is considered to be quite advantageous.

5.2.7.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

   MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

   Under General Manager, there are Planning, Administration, Finance, Production, and Quality Control Departments. Under Quality Control, Finance, and Administration Departments, Assistant General Managers, Managers, and staff members are assigned. Planning and Production Departments have Deputy General Managers, Managers, Assistant Managers, and staff members.

3. Management's decision making process

   Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

   MOI determines the amount of production, suppliers, and distributors. The factory manufactures cement based on the amount of production determined by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

   Factory's General Manager previously worked as General Manager of another factory under MOI. It can be said that personnel with production management experience is assigned as this factory's manager.

6. Management ethics

   MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations.

7. Business plan

MOI determines the amount of annual and monthly production based on demand. Planned production amount for FY 2012-2013 is 20,500 tons per month and 246,000 tons per year, respectively. Factories will not create business plans.

8. Public nature of the business (provision of employment opportunities)

Currently, 294 employees work in the factory and most of them live in the factory dorms. Very few commute from the town of Kyaukse, which is located about 10km east of the factory.

9. Market share, competition environment with private sector companies

Cement manufactured by this factory is mainly sold to government agencies as it is used for public works. The sales area covers the middle and northern part of the country such as Mandalay, Sagaing, and Kachin State, but Naypyitaw is not included in the sales area. The cement market consists of good quality imports from Thailand, products manufactured by domestic private sector companies, and SOEs products. Annual domestic cement demand is estimated to be 5 million tons. Of which, 2.4 million tons are imported, 2 million tons are manufactured by domestic private companies, and 0.6 million tons are manufactured by 3 SOE factories. The market share of those 3 SOE factories is estimated to be around 12%.

Demand for cement is rapidly growing as the economy develops in Myanmar. As described above, the market share of SOE factories is about 12%, but the share is declining with high quality cement imports from Thailand and entries of domestic private sector companies into the market. Furthermore, Thailand's Siam Cement is planning to construct a cement factory and 4 distribution outlets in Myanmar, and the price and product competition is increasingly fierce. Distributors in the market regard the quality of SOE cement is not stable compared to that of imported products, and reduction in sales price could be expected due to severe competitions. However, SOE products are widely used for public works and a certain level of demand is expected in the northern market where imported products can be more expensive due to higher transportation cost. Hence, there is a possibility that the demand for SOE products will increase for public works projects and in the northern market. Also, if the factory changes fuel from inland natural gas to coal and add the increased fuel cost to the sales price, we think that it is difficult for the factory to keep price competitiveness.

5.2.7.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 2 years are 19.72% for FY 2010-2011 and 8.24% for FY 2011-2012, respectively. The reason why the rate of return on invested capital in FY 2011-2012 drastically declined is that production was suspended for 3 months due to factory renovation. Also, the fact that cost of goods manufactured and cost of goods sold did not change for the past 2 years contributed to the sudden decrease of the rate.

Rates of return on invested capital in FY 2011-2012 for Japanese peer companies such as Sumitomo Osaka Cement, Tokuyama Corporation, DC, and Ryuku Cement (not listed) are 3.16%, 3.94%, 5.91%, and 4.67%, respectively (all non-consolidated basis). They have lower rates of return on invested capital compared to that of the Kyaukse factory, which indicates they are less profitable than the factory due to their high-cost structure. Turnover ratios of long-term fixed capital for most of those Japanese peers are about 80%, while their rates of return on income before interest and tax is about 6%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 30%, while the rate of return on income before interest and tax is about 27%. This indicates that the factory's ratio of sales to long-term fixed capital is low, whereas the ratio of income before interest and tax to sales is high.

2. Growth potential

Sales in FY 2011-2012 (3.65 billion kyats) declined by 25% compared to sales in FY 2010-2011 (4.86 billion kyats). This decrease in sales is a temporary phenomenon, as mentioned earlier, caused by the production suspension due to the factory renovation. The factory can raise the rate of operation from FY 2012-2013 as the renovation is complete. As demand for construction grows, demand for cement is expected to largely increase. However, it is expected that the factory will continuously face price competitions with imports and that the amount of production could decrease if the cost is increased owing to the change in fuel usage from inland natural gas to coal in 2013. We think that the factory can stay competitive if they can secure a certain level of demand for public works and meet demand in the competitive northern market.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their

operations. Thus, we consider that the safety of factory finance is quite high.

5.2.7.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

   Deputy General Manager is assigned under Production Department. Under Deputy General Manager, there are 4 sections. Of which, 2 sections have Assistant General Managers, Managers, and staff members. Other two sections do not have Assistant General Managers, and Managers and staff members are assigned directly under Deputy General Manager. Approximately 60% of factory employees are assigned in Production Department.

2. Production plan

   MOI determines the amount of annual production, and factories are to manufacture products based on the amount decided. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans. Production capacity is 300 tons per day, and actual operation is about 10 months per year.

3. Production technology (production efficiency)

   Machines used in the factory are Chinese and installed by CAMC. During the factory tour, we saw that clinker was leaking from one of the production equipment (kiln). According to the enterprise, there could be a maximum loss of 10%. Moreover, the factory estimates the rate of operation is around 70% because the supply of inland natural gas is restricted so as to meet the needs of CNG and other plants (the factory requires 2.2 million cubic feet of natural gas a day, but it is actually supplied with only 1.5 million cubic feet per day). The factory is operating 24 hours a day with 3 eight-hour shifts. Maintenance period is about 2 months per year in total.

   Monthly sales per employee between FY 2009-2010 and 2011-2012 are 1.93 million kyats in FY 2009-2010, 1.55 million kyats in FY 2010-2011, and 1.15 million kyats in FY 2011-2012, respectively, and they are at a higher level compared to those of the other selected cement factories (Thayet and Kyangin) during the same period. Further, monthly operating income for the same duration is 0.61 million kyats, 0.43million kyats, and 0.12 million kyats, respectively. The reason why monthly sales and operating income per employee declined in FY 2011-2012 is, as mentioned earlier, the suspension of production caused by the

factory renovation. Compared to the other two factories, production efficiency of this factory is high. However, cement is packed in a 50kg bag and shipped out, and like other domestic private cement manufacturers, the factory does not possess a system to ship cement in bulk. Therefore, the factory's production efficiency is lower compared to overseas companies with the ability to ship cement in bulk.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials. Products are manufactured according to the amount of available raw materials and fuel, and the amount of available materials determines the amount of production. Hence, if necessary materials are not readily available and are not procured enough, it will be difficult to maintain process management.

Main raw materials include limestone, clay, bauxite, and gypsum. Limestone is located 1 kilometer away from the plant on the premises, and clay is also available in the factory site. On the other hand, bauxite and gypsum are located 130km and 180km away from the factory, respectively. In comparison with other 2 cement factories, procurement risk for this factory is small as the factory can procure raw materials relatively near the factory. However, as mentioned earlier, the factory cannot operate at full capacity since the supply of inland natural gas is limited.

5. Work management

Manuals are used for employee trainings. The training period for newly hired employees is about 6 months. In this way, the factory provides trainings to employees and standardizes work methods. As appropriate, the factory accepts employees of the Kyangin factory and trains them for the dry process.

Distributors in the market regard that the quality of cement manufactured by SOE factories is not stable and that the weight per bag is not constant. While manuals for work methods are available, improvement is needed in terms of quality control.

6. Cost control

Trend of the breakdown of cost of goods manufactured in FY 2011-2012 is that fuel cost accounts for about 60%, raw material cost accounts for 21%, and depreciation charge accounts for 12%.

Unlike in the case of Thayet and Kyangin factories that use offshore natural gas for fuel, Kyaukse can use cheaper inland natural gas at this point. However, the supply of inland natural gas will be terminated after the LNG pipeline between Rakhine State and China is completed in 2013, and the factory will be required to utilize coal as an alternative fuel to offshore natural gas. When coal is used, the factory expects that the cost per 50kg bag will increase by 1,500 kyats, making the sales price of their product equals to the sales price of imported products (about 5,300 kyats). In contrast, if the factory uses offshore natural gas, assuming that the currently applied (up until May of 2013) discounted fuel charge of 5 USD per million BTU will be raised to

around 11 USD per million BTU in the future, fuel cost will increase enormously and cost control will prove challenging.

7. Equipment management / work environment

The factory is established in 2003 and considered relatively new. Even though a part of the equipment (kiln) should be fixed for the clinker leakage, the factory said that the repair budget is not permitted.

5.2.7.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

SOE cement factories produce about 0.6 million tons of cement annually. Domestic private cement enterprises produce about 2 million tons of cement per year, and the country imports about 2.4 million tons of cement from Thailand. Kyaukse Factory produces 300 tons of cement daily and is estimated to produce about 80,000 to 90,000 tons annually. Thus, the factory's market share is assumed to be about 1 to 2%.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells cement to government agencies and the market. The factory does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

3. Operating structure of distribution department, customer management

Distributors directly transport cement from the factory. They are not in the position to require customer management for their government clients. But for private distributors, we think that the factory needs to manage customers (their buying and inquiry history, for instance) so as to understand the market needs, conduct better marketing, and improve the level of customer satisfaction.

4. Cooperation with external entities (wholesale, retail)

Since the factory sells most of its products to government agencies, there is no cooperation with external entities regarding wholesale and retail operations.

5.2.7.6 Issues

Based on the findings of the research, the following issues can be raised:

Management:

- Demand for cement is expected to grow with the rise in demand for construction; however, quality of the factory's products is not as stable as that of imports and other domestic manufacturers. Thus, there is no other way to keep product competitiveness than to compete on lower prices, sales regions (the northern market), and public works. But, it is not easy to keep price competitiveness from FY 2013-2014 when price competitions with imported and domestic products and the increase in fuel cost are assumed.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- As far as growth potential (monthly sales and operating income per employee) is concerned, we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to rise with the increase in fuel cost; thus, operating income is expected to decline or turn to a loss.

Production:

- Product quality is unstable, and factory's products lack competitiveness.
- Since the production equipment (kiln) requires repair and the factory is not capable of bulk shipment, production efficiency is low.

Distribution:

- The factory is not able to independently formulate marketing and sales strategies. Thus, they cannot manufacture products that meet the market needs and are missing out on opportunities to generate additional earnings.

Pictures Taken at the Kyaukse Factory in December 2012

5.2.8 Pharmaceutical & Foodstuff Factory #1 (Pharmaceutical; Yangon)

We visited the factory #1 (Pharmaceutical in Yangon) on November 15, 2012 and conducted an interview. We did not undertake a factory tour since the tour was not permitted. Points of our observation are as follows:

- Fierce competition with imported products in the liberalized market could lead to reductions in sales prices.
- The factory cannot stay competitive and their sales and operating income could decline if they cannot charge a portion of the increased imported raw material cost caused by the abolition of the official foreign exchange rate in April 2012.
- Even though the competition with imports is severe, the factory's products have a strong brand.
- In comparison to imported products, their ability to compete in the market is low due to low quality; however, they can secure a certain level of demand from the government.
- If the factory experiences operating loss with increased cost, they need a fundamental reform like other factories.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.8.1 Overview of the Factory

Factory #1 under Pharmaceutical and Foodstuff Industries Enterprise is a pharmaceutical plant established by a British company in 1958. At present, the factory manufactures 160 kinds of products in total, including tablets / capsules, vaccines / antivenin, sterile products, anti-malarial drugs, and Hepatitis B vaccines. In the last few years, the factory replaced old machines and constructed a new facility three times, but a lot of facility is still outdated.

The factory has been increasing the number of employees for the past 3 years, resulting from the new facility construction, for instance. The number of employees in FY 2011-2012 was 1,641 (154 officers and 1,487 other employees, up 11.5% from the previous fiscal year). There were in 1,472 employees in FY 2010-2011 (105 officers and 1,367 other employees, up 5.6% from the previous fiscal year) and 1,394 employees in FY 2009-2010 (99 officers and 1,295 other employees).

In addition, the factory is located in Yangon, the biggest market in the country and has a location advantage.

5.2.8.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

   MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

   Under General Manager, there are Planning, Administration, Finance, Production and Quality Control & Research Departments. Except for Quality Control & Research Department, each department has Deputy General Manager. Production Department consists of 5 sections based on the kinds of products manufactured.

3. Management's decision making process

   Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

   MOI determines the amount of production, suppliers, and distributors and procures raw materials. The factory manufactures pharmaceutical using the raw materials procured by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

   General Manager holds a degree in mechanical engineering, and Deputy General Managers of Planning and Production Departments hold degrees in botany and zoology, respectively. It can be observed, to some degree, that personnel with degrees and experiences related to pharmaceuticals are assigned as managers.

6. Management ethics

   MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations.

7. Business plan

MOI determines the amount of annual production and creates plans for new products if MOI deems they are viable. Factories are expected to manufacture products based on the amount of raw materials provided and will not create business plans.

8. Public nature of the business (provision of employment opportunities)

Currently, 1,641 employees work in the factory and commute from the Yangon metropolitan area.

9. Market share, competition environment with private sector companies

Pharmaceuticals manufactured in this factory are sold to government agencies such as Ministry of Health and to the market through sales agents. The factory also sells their products to retail customers at their wholly-owned distribution outlets. The sales area covers the entire country. The market is dominated by imported products, and according to the factory, their market share is about 10%. However, based on our research, the actual market share is estimated to be about 3% (See "2.2.2.6. Current status of selective industries: Pharmaceuticals").

Factory products were previously sold under the brand name of BPI (Burma Pharmaceutical Industry) till 1988 and MPF (Myanmar Pharmaceutical Factory) afterword. The brand name was changed back to BPI in 2011, and brand awareness is still high. As mentioned earlier, we estimate that the factory's market share is about 3%, and imported products from India, Bangladesh, and China account for the rest of the market share. The factory's products are relatively cheap, and we think that they are competitive in terms of price. On the other hand, their product competitiveness is not as high as their price competitiveness because there are no quality control standards in Myanmar and the factory is using the guidelines the United Kingdom used to apply. Demand for government agencies is stable, and the amount of sales for the market is increasing in recent years. But price and product competitions with imports are fierce. Additionally, it is expected that, from FY 2012-2013, the cost of imported raw material will largely rise as a result of the abolition of the official foreign exchange rate in April 2012. It is not easy for the factory to charge a portion of the increased cost of goods manufactured to the sales price; thus, we think that it is difficult to stay price-competitive.

5.2.8.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 3 years are 7.20% in FY 2009-2010, 3.80% in FY 2010-2011, and 4.12% in FY 2011-2012, respectively. The reason why the rate of return on invested capital in FY 2010-2011 almost halved compared to FY 2009-2010 is that the amount of production declined as the delivery of imported raw materials delayed.

Rates of return on invested capital in FY 2011-2012 for Japanese peer companies such as Fuji Pharma and Nissui Pharmaceutical are 10.44% and 11.27%, respectively (all non-consolidated basis). They have higher rates of return on invested capital compared to that of the Yangon factory, which indicates they are more profitable than the factory. Turnover ratios of long-term fixed capital for most of those Japanese peers are more than 50%, while their rates of return on income before interest and tax is about 10% to 20%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 20%, while the rate of return on income before interest and tax is also about 20%. This indicates that the factory's ratio of sales to long-term fixed capital is low, whereas the ratio of income before interest and tax to sales is about the same or high.

In addition, we simulated the factory's cost of imported raw materials and operating income using the market exchange rate in FY 2011-2012 (1Euro = 1,060 kyats) even though the official rate was used during that period, while taking into consideration the effects of large inventory. We found that the simulated operating income declined to 3.11 million kyats (estimated figure), while the factory reported 1,588.8 million kyats of operating income.

2. Growth potential

Sales in FY 2011-2012 (6,590 million kyats) increased by 45% compared to sales in FY 2010-2011 (4,530 kyats). We expect that the factory will continuously face price and product competitions with imported products. Furthermore, the government is going to drastically reduce the budget for raw material procurement for FY 2012-2013 in association with the abolition of the official foreign exchange rate. Hence, in FY 2012-2013, we anticipate that the amount of imported raw materials will decrease, and the amount of production as well as sales will also decline. If the factory is to raise a sales price along with the increase in the cost of goods manufactured, it will be difficult for the factory to stay competitive in terms of price and growth will likely drop.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1,

Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.8.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

Deputy General Manager is assigned under Production Department. Under that department, there are 5 sections based on the kinds of products manufactured: tablets / capsules, vaccines / antivenin, sterile products, anti-malarial drugs, and Hepatitis B vaccines.

2. Production plan

MOI determines the amount of annual production, and factories are to manufacture products based on the amount of raw materials procured by MOI. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans. The amount of planned sales for government agencies in FY 2011-2012 was 1.99 billion kyats and for the retail market (sold through sales agents) was 2.01 billion kyats. In contrast, the amount of planned sales for government agencies in FY 2012-2013 is very high at 7.37 billion kyats. This is because some of the government clients' (departments') budget increased approximately five-fold. But, the government has not decided which production should be increased yet, and the amount of actual sales for government agencies as of October 2012 was only 1.72 billion kyats. We do not think it is likely that this planned sales amount will be achieved.

3. Production technology (production efficiency)

This factory was established in 1958, and facility is outdated. Many of the machines used in the factory are British, but the factory replaced and installed new machines with funds obtained through loans from Thailand, China, and South Korea. The loan from Thailand was used to renew facility relating to

manufacturing of syringes and sterile products. Chinese loan was used to replace tablet production lines. Also, from FY 2012-2013, the factory received a loan from South Korea and established a plant for manufacturing Hepatitis B vaccines. The factory can manufacture products with 3 shifts per day at full capacity, but generally they manufacture with 2 shifts per day on average. The enterprise estimates that the rate of operation is about 80%.

Monthly sales per employee in FY 2009-2010, 2010-2011, and 2011-2012 are not so high: 358,000 kyats, 257,000 kyats, and 335,000 kyats, respectively. Monthly operating income for the same duration is 105,000 kyats, 55,000 kyats, and 81,000 kyats, respectively. One of the reasons why monthly operating income in FY 2011-2012 declined even though sales in the same fiscal year rose compared to FY 2009-2010 is considered to be the fact that the factory has increased the number of employees by 247 (or 17.7%) in the past three fiscal years. We do not think that production efficiency of this factory is high.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials necessary and asks MOI to procure raw materials. Products are manufactured according to the amount of available raw materials. The amount of available raw materials determines the amount of production. Hence, if raw materials are not readily available and are not procured enough, it will be difficult to maintain process management.

As described earlier, in FY 2010-2011, a delay in the delivery of imported raw materials led to the decline in the amount of production. This happened because the factory relies 60% of raw materials on imports and has a high procurement risk. Major suppliers of imported raw materials include companies in Hong Kong, India, Singapore, and Thailand. It takes 2 to 3 month from the time of the order to the delivery of raw materials to the factory.

5. Work management

The factory uses manuals for employee trainings and standardizes work methods. Moreover, employees who were trained at WHO (World Health Organization) conduct product quality checks.

6. Cost control

Trend of the breakdown of cost of goods manufactured in FY 2011-2012 is that material cost accounts most for 39%. Labor cost accounts for 29%, and depreciation charge accounts for 15%.

It is certain that the cost of imported raw materials will rise in corresponding to the abolition of the official foreign exchange rate in April 2012. Considering that the raw material budget allocated for FY 2013-2014 is going to be slashed, we expect that it is difficult to control cost down the road.

7. Equipment management / work environment

We did not undertake research for this item since the factory tour was not permitted.

5.2.8.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

Pharmaceuticals from India, Bangladesh, and China are imported to Myanmar, and imported products have more than 90% of the market share. Though the SOE factory's products are sold in the market and have a strong brand, their market share is extremely low.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells pharmaceuticals to government agencies and the market. The factory does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

3. Operating structure of distribution department, customer management

They are not in the position to require customer management for their government clients. But for sales to the market through sales agents, we think that the factory needs to manage customers (their buying and inquiry history, for instance) so as to understand the market needs, conduct better marketing, and improve the level of customer satisfaction.

4. Cooperation with external entities (wholesale, retail)

About half of the factory products are sold to government agencies and the other half are sold to the market through sales agents.

5.2.8.6 Issues

Based on the findings of the research, the following issues can be raised:

<u>Management</u>:

- Price competition with imported products and rise in the cost of imported raw materials are expected. It is not easy to stay competitive in terms of price.

- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- As far as growth potential (monthly sales and operating income per employee) is concerned, we expect a decline in the amount of production in association with the drastic budget cut for raw materials and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured is likely to rise with the increase in the cost of imported raw materials; thus, operating income is expected to decline.

Production:

- The factory's dependence on imported raw material is high. A shortfall of procurement and / or delay in delivery will cause a postponement of production.
- Even though the factory undertook facility replacement in the last few years, many machines are outdated and the rate of operation is not high.

Distribution:

- The factory is not able to independently formulate marketing and sales strategies. Thus, they cannot manufacture products that meet the market needs and are missing out on opportunities to generate additional earnings.

5.2.9 Textile Factory #1 (Textile; Shwedaung)

We visited the factory #1 (Textile in Shwedaung) on November 16, 2012 and conducted an interview and factory tour. Points of our observation are as follows:

- Amid the ongoing market liberalization, factory products cannot compete with imports in terms of product quality, and sales price and revenues decline.
- As the factory uses low quality domestic cotton and facilities are outdated, they cannot manufacture products that the market demands. Thus, demand for their products is low.
- It is anticipated that the sewing industry will expand as Myanmar's low labor cost can be fully utilized for industry growth. Thus, huge demand is expected if Myanmar is able to manufacture high quality yarns and fabrics cheaply.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.9.1 Overview of the Factory

Factory #1 under Textile Enterprise is a textile plant with spinning, weaving, and finishing functions. It was established as an import substitution factory in the 1980's. At first, the factory operated spinning and weaving only. But, several years later, they started to manufacture finished goods with the assistance of the World Bank.

The factory started a set of production from cotton to finished goods since 1990 and specializes in supplying products to the domestic market. Quality of that time was relatively high, and they were able to expand their market share.

Under General Manager, there are 5 departments. The number of employees is 1,935, of which, 70 people are officers above Assistant Managers.

The Shwedaung factory is located about 230km north-northwest of Yangon along the Irrawaddy River and situated about half an hour drive from the nearby town of Pyay. Compared to the other SOE factories under research, their location is not so bad.

5.2.9.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

Under General Manager, there are Planning, Administration, Finance, Production, and Quality Control Departments. Planning and Production Departments hold Deputy General Managers, Assistant General Managers, Managers, and staff members. Each of these 2 departments consists of 3 to 4 sections overseen by Managers. Finance, Administration and Quality Control Departments have Managers and staff members. Except for Quality Control that has only 1 section, other departments consist of 4 to 5 sections.

3. Management's decision making process

Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

MOI determines the amount of production, suppliers, and distributors and procures raw materials. The factory manufactures yarns and fabrics using the raw materials procured by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

A person with abundant knowledge and experience in managing a textile factory is assigned as General Manager. Current General Manager holds a bachelor's degree in textile engineering and has been working for MOI for the past 32 years.

6. Management ethics

MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations.

7. Business plan

MOI determines the amount of annual production and creates plans for new products if MOI deems they are viable. Factories are expected to manufacture products based on the amount of raw materials

provided and will not create business plans.

8. Public nature of the business (provision of employment opportunities)

600 households out of 1,935 employees live in factory dorms. Other employees commute from the nearby areas, and the factory employment contributes to local job generation to a certain extent.

9. Market share, competition with private sector companies

Imported products from India, China, Thailand and other countries sharply increased and dominate the Myanmar textile market. Products manufactured by SOE factories are relatively cheap and have price competitiveness. However, product quality is inferior to imported products, and SOE products are not competitive. Another factor for the factory's poor performance derives from decreased occasions to wear a native costume like longyi as Myanmar opens up to other countries.

5.2.9.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 3 years are negative: － 0.31% in FY 2009-2010, － 18.57 in FY 2010-2011, and －2.04% in FY 2011-2012. The reasons why the rate of return on invested capital largely decreased in FY 2010-2011 are that there was a wide gap between the amount of yarn manufactured based on the plan and the amount of actual orders received and that direct exporting of excess inventory to China resulted in a huge foreign exchange loss.

The rate of return on invested capital in FY 2011-2012 for a Japanese peer company, Shinnaigai Textile, is 3.73% (non-consolidated basis). They have a higher rate of return on invested capital compared to that of the Shwedaung factory, which indicates they are more profitable than the factory. The turnover ratio of long-term fixed capital of Shinnaigai Textile is more than 200%, while their rate of return on income before interest and tax is about 2%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 23%, while the rate of return on income before interest and tax is negative due to a loss. This indicates that the factory's ratio of sales to long-term fixed capital is low.

2. Growth potential

Sales in FY 2011-2012 (2.84 billion kyats) decreased by 57% compared to sales in FY 2010-2011 (6.61 billion kyats). We expect that the factory will continuously face competitions with high quality, inexpensive

imports from India and China. In addition, facility replacement is necessary to manufacture products the market demands. But, considering that there is no budget available for facility replacement and that quality improvement of domestic cotton cannot be expected, we foresee that demand will not rise and sales will decline.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.9.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

Production Department consists of 4 sections including spinning, weaving, and finishing. Deputy General Manager, Assistant General Manager, Managers, and staff members are assigned in Production.

2. Production plan

MOI determines the amount of monthly and annual production, and factories are to manufacture products based on the production amount determined. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans.

3. Production technology (production efficiency)

Except for the fabric division with Chinese machinery installed in the 2000's, many of the machines are outdated, and the rate of operation is low. Especially, renewal of finishing equipment installed in the late 1980's is an issue of importance. The factory continues to manufacture by repairing facilities that they cannot

replace due to budget restrictions. The fact that the factory cannot manufacture high quality yarns and fabrics with low-performance equipment largely affects the quality of final products.

It is anticipated that the sewing industry will expand as Myanmar's low labor cost can be fully utilized for industry growth. Thus, huge demand is expected if Myanmar is able to manufacture high quality yarns and fabrics cheaply. However, a large amount of capital investment and ability to procure high quality cotton are essential to create a huge demand.

Monthly sales per employee between FY 2009-2010 and 2011-2012 are low: 155,000 kyats, 341,000 kyats, and 122,000 kyats, respectively. Operating income for the same duration is a loss for the consecutive 3 years. Thus, production efficiency of this factory is very low.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials necessary and asks MOI to procure raw materials. Products are manufactured according to the amount of available raw materials. Hence, if raw materials are not readily available and are not procured enough, it will be difficult to maintain process management.

Many of necessary materials can be procured domestically. However, procurement of cotton is becoming difficult as domestic cotton farmers convert to produce more profitable legumes and the supply of cotton is declining. The factory is reducing procurement risk by starting to partially use imported cotton.

5. Work management

Production is done with 2 shifts (6:00 to 14:30 and 14:30 to 23:30). Work methods are standardized. But the rate of operation is low; thus, there should be a demand issue to be addressed before improving work management.

6. Cost control

Breakdown of cost of goods manufactured in FY 2011-2012 is that material cost accounts for 70% of cost of goods manufactured, and labor cost accounts for about 17%, and other cost for 13%.

As mentioned earlier, domestic cotton farmers convert their crops to more profitable legumes. Consequently, the supply of cotton declines, and the unit price of cotton continues to rise. There is a possibility that a rise in the price of domestic cotton becomes a factor to further increase cost of goods manufactured. Moreover, the factory is to procure a large quantity of high quality cotton from overseas so as to manufacture higher quality products that meet the market needs, they will be required to pass a portion of the increased raw material cost to the sales price. Thus, the factory needs to control cost more strictly.

7. Equipment management / work environment

Except for the fabric division with Chinese machinery installed in the 2000's, many facilities were installed in the late 1980's and are outdated. Especially, renewal of finishing equipment installed in the late 1980's is an issue of importance. The factory continues to maintain facilities in the factory's workshops. Annual expense on parts purchased for maintenance is about 50 million kyats.

5.2.9.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

The textile market is dominated by cheap and high quality products imported from India and China, and the market share of products manufactured by SOE factories is low. It seems that uniforms, shirts, and longyis manufactured at the Shwedaung factory are sold in the market through distributors; however, we did not come across with any of their products at super markets and shops in Yangon, Mandalay, and other cities.

2. Marketing / sales strategy, sales plan

The factory designs uniforms, shirts, and longyis that they make and has about 700 designs. The factory suffers from decline in sales and sales price as cheap and high quality imports are increasingly available in recent years. The factory also researches and develops clothes using jeans like fabrics; however, it is not easy for them to compete with imported products since they manufacture products with low quality domestic cotton using outdated facilities.

3. Operating structure of distribution department, customer management

Generally, as a new client, a distributor checks production facilities before deciding on the order contents and quantity. The factory accepts orders for not only regular products, but also special order products. But, the factory is not able to cultivate the market with products that can vie with competitive imports.

4. Cooperation with external entities (wholesale, retail)

The factory exhibits finished products in the premises and welcomes wholesale agents that are interested in trading.

5.2.9.6 Issues

Based on the findings of the research, the following issues can be raised:

Management:

- Demand for products manufactured at the Shwedaung factory is low in the textile market in Myanmar. The factory's products lack competitiveness against imported products from China and other countries.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- Profitability (the rate of return on invested capital) of the factory is much lower than those of Japanese competitors. Especially, the rates of return on invested capital are negative in 3 consecutive fiscal years. Their products are low quality and facing fierce price competitions with imported products; hence, they cannot compete.
- With regards to growth (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease. Also, cost of goods manufactured such as the price of cotton is likely to increase; thus, it is difficult to anticipate improvement in operating income.

Production:

- Except for the fabric division, many of the machines are outdated, and the rate of operation is low. Especially, renewal of finishing equipment installed in the late 1980's is an issue of importance. The fact that the factory cannot manufacture high quality yarns and fabrics with low-performance equipment largely affects the quality of final products.
- It is anticipated that the sewing industry will expand as Myanmar's low labor cost can be fully utilized for industry growth. Thus, huge demand is expected if Myanmar is able to manufacture high quality yarns and fabrics cheaply. However, a large amount of capital investment and ability to procure high quality cotton are essential to create a huge demand.

Distribution:

- Awareness of products manufactured at the Shwedaung factory such as uniforms, shirts, and longyis is low in the market.
- The factory is located about 230km north-northwest of Yangon, and their location advantage is not so bad compared to other SOE factories selected for research.

Pictures Taken at the Shwedaung Factory in November 2012

5.2.10 Textile Factory #3 (Textile; Sagaing)

We visited the factory #3 (Textile in Sagaing) on December 14, 2012 and conducted an interview and factory tour. Points of our observation are as follows:

- Amid the ongoing market liberalization, factory products cannot compete with imports in terms of product quality, and sales price and revenues decline.
- As the factory uses low quality domestic cotton and facilities are outdated, they cannot manufacture products that the market demands. Thus, demand for their products is low.
- Textile Enterprise has a production network based on the division of labor among 18 factories throughout the country. However, the production network is inefficient as the production system is not constructed to manufacture the appropriate amount of products in response to demand. The prospect for improvement is low.
- If the enterprise deems that the factory is unnecessary, we think that measures to close the factory including transformation of the factory to other uses and asset sales should be considered.

Overview of the factory, observations on management, financial, production, and distribution aspects as well as issues of the factory are as indicated below.

5.2.10.1 Overview of the Factory

Factory #3 under Textile Enterprise is a spinning and weaving plant that commenced operation in June 1972. Tomen (Currently named Toyota Tsusho Corporation) provided technical assistance through Japanese official development assistance.

Main products include cotton yarns (7s, 10s, 21s, and 32s), poplin fabrics (44” and 47” widths), gauzes (32” width) and bandages (21” width). A majority of their products are semi-finished goods provided to Paleik and Shwedaung factories at a cost basis, while about 30% of product sales consist of finished goods such as blankets and bandages.

The number of employees is 1,226 (29 officers and 1,197 other employees). Although the factory can hire up to a maximum of 2,001 people (44 officers and 1,957 other employees), it does not have to hire that many employees since the factory is not in full production.

Further, the factory is in the inland area situated about 16km southwest of Mandalay, and its location advantage is low.

5.2.10.2 Observations on Management

We researched the following items to analyze management of SOE factories: 1) Management vision / strategy; 2) Structure and operation of senior management and organization; 3) Management's decision making process; 4) Business model; 5) Qualification of factory manager; 6) Management ethics; 7) Business plan; 8) Public nature of the business (provision of employment opportunities); and 9) Market share, competition environment with private sector companies.

1. Management vision / strategy

   MOI develops all management vision and strategies; therefore, it is not the factory's discretion to make a decision on such matters.

2. Structure and operation of senior management and organization

   Under General Manager and Deputy General Manager, there are Planning, Administration, Finance, Production, and Quality Control Departments. Planning and Production Departments hold Deputy General Managers, Assistant General Managers, Managers, and staff members. Finance, Administration and Quality Control Departments have Managers and staff members.

3. Management's decision making process

   Management's decision making process is believed to be a top down system where MOI basically makes business decisions and factories follow the decisions and manufacture products. However, factory managers have discretion over employee promotion / transfer and operation control such as schedule management.

4. Business model

   MOI determines the amount of production, suppliers, and distributors and procures raw materials. The factory manufactures yarns and fabrics using the raw materials procured by MOI. The factory does not draw up a business model.

5. Qualification of factory manager

   Former military personnel (major) became General Manager 2 years ago. It seems that credentials to be General Manager are not required.

6. Management ethics

   MOI, not the factory, determines a basis of the standard with which factories and MOI should follow as organizations.

7. Business plan

MOI determines the amount of annual production and creates plans for new products if MOI deems they are viable. Factories are expected to manufacture products based on the amount of raw materials provided and will not create business plans.

8. Public nature of the business (provision of employment opportunities)

Currently, 1,226 employees work in the factory and most of them live in the factory dorms. The factory provides shuttle buses for employees who commute from the Sagaing region. In the closed economy, this factory was established with a goal of strengthening employment opportunities and industrializing the countryside. However, the factory has lost its significance as the market is now more liberalized than ever before and consumers are able to purchase inexpensive imported products with better quality that suit their needs.

9. Market share, competition environment with private sector companies

Of products (yarns and fabrics) manufactured at this factory, about 70% is sold to other SOE textile factories as semi-finished goods at a production cost basis. Of the rest of 30% (finished goods), bandages are sold to Ministry of Health and blankets are sold in the market. The textile market is dominated by products of private entities in India and China.

The market demands wider fabrics than fabrics the factory is able to manufacture. Moreover, demand is also high for high quality and cheap imported yarns from India and China. Products manufactured at SOE textile factories are cheap and seem to have price competitiveness. However, if we take factory made blankets sold to the market as an example, the demand for such products is low and they do not have product competitiveness since product quality is low. We foresee that competitions with the private sector will grow intense with the lift of import tariff bans in 2010, establishment of ASEAN Community in 2015, and competitive products of neighboring countries. The factory expects that they can improve competitiveness if new machinery is installed and can meet demand from ASEAN countries. Nevertheless, the factory cannot compete in the market if they cannot manufacture high quality, wider fabrics (width of 80") that meet the market needs. Additionally, production efficiency will not improve unless the division of labor and production network with 18 factories is revised. Thus, we expect that their competitiveness will decline steadily in the future.

5.2.10.3 Observations on Finance

We researched the following items to analyze finance of SOE factories: 1) Profitability; 2) Growth potential; and 3) Safety. Some analysis includes comparisons with sector peer companies in Japan.

1. Profitability

Rates of return on invested capital for the past 3 years are extremely low: 0.80% in FY 2009-2010, －25.14% in FY 2010-2011, and －6.20% in FY 2011-2012. The reason why the rate of return on invested capital turned negative in FY 2010-2011 is that there was a wide gap between the amount of yarn manufactured based on the plan and the amount of actual orders received and that direct exporting of excess inventory to China resulted in a huge foreign exchange loss. In FY 2011-2012, the rate also turned negative because of the excess inventory again. However, in this fiscal year, the factory did not export the excess inventory and used it to manufacture and sell bandages to government agencies such as Ministry of Health. It should be noted; however, that there was no profit realized from the bandage sales and that manufacturing cost is borne by both government agencies and the factory.

The rate of return on invested capital in FY 2011-2012 for a Japanese peer company, Shinnaigai Textile, is 3.73% (non-consolidated basis). They have a higher rate of return on invested capital compared to that of the Sagaing factory, which indicates they are more profitable than the factory. The turnover ratio of long-term fixed capital of Shinnaigai Textile is more than 200%, while their rate of return on income before interest and tax is about 2%. On the other hand, the factory's turnover ratio of long-term fixed capital is about 20%, while the rate of return on income before interest and tax is negative due to a loss. This indicates that the factory's ratio of sales to long-term fixed capital is low.

2. Growth potential

Sales in FY 2011-2012 (1.74 billion kyats) decreased by 40% compared to sales in FY 2010-2011 (2.9 billion kyats). We expect that the factory will continuously face competitions with high quality, inexpensive imports from India and China. In addition, facility replacement is necessary to manufacture products the market demands. But, considering that there is no budget available for facility replacement and that quality improvement of domestic cotton cannot be expected, we foresee that demand will not rise and sales will decline.

3. Safety

The factory's balance sheet contains government fund accounts such as Government Account 1, Government Account 2 or Investment. These accounts are considered to be a budget (operating capital) provided by the government. Up until FY 2011-2012, operating capital was provided or losses were compensated even though the factory's business is making a loss. However, from FY 2012-2013, factories are required to conduct business and make a profit with the operating capital provided. On the other hand, if

factories cannot make a profit with operating capital, they are required to borrow a portion of the loss from the government. In this manner, though there are differences in ways of providing operating capital, the government continuously provides operating capital and / or loans to factories regardless of the state of their operations. Thus, we consider that the safety of factory finance is quite high.

5.2.10.4 Observations on Production

We researched the following items to analyze production of SOE factories: 1) Operating structure of production department; 2) Production plan; 3) Production technology (production efficiency); 4) Process management; 5) Work management; 6) Cost control; and 7) Equipment management / work environment.

1. Operating structure of production department

Production Department consists of Spinning, Weaving, and Garment sections, and Deputy General Manager, Assistant Managers, Managers, and staff members are assigned.

2. Production plan

MOI determines the amount of annual production, and factories are to manufacture products based on the amount of raw materials procured by MOI. Production is basically a made-to-order system, and factories are not required to search potential clients and to alter production plans. Annual production capacity is 1.63 million pounds for yarn and 2.64 million yards for fabric.

3. Production technology (production efficiency)

The factory manufactures using machinery installed by Tomen, etc. in 1972. Although the factory replaced some facility with Chinese machinery in the 2000's, most of the machinery is outdated, and the rate of operation is low.

According to the factory, they have 977 machines, of which 97% or 945 machines are operable. 222 machines (10 of them are not operable) are installed in the spinning section, 646 machines (22 of them are not operable) are installed in the weaving section, and 109 machines (all are operable) are installed in the blanket section. However, there are many idle machines in the factory due to low demand for their products, and the rate of operation is low.

Monthly sales per employee between FY 2009-2010 and 2011-2012 are low: 114,000 kyats, 156,000 kyats, and 115,000 kyats, respectively. Operating income for the same duration is a loss for the consecutive 2 years except 2,000 kyats in FY 2009-2010. Thus, production efficiency of this factory is very low.

4. Process management

Based on the amount of production determined by MOI, the factory calculates the amount of raw materials necessary and asks MOI to procure raw materials. Products are manufactured according to the amount of available raw materials. Hence, if raw materials are not readily available and are not procured enough, it will be difficult to maintain process management.

Many of necessary materials can be procured domestically. However, procurement of cotton is becoming difficult as domestic cotton farmers convert to produce more profitable legumes and the supply of cotton is declining. The factory is reducing procurement risk by starting to partially use imported cotton.

Cotton with the width of 40" is classified as Grade A and the width of 32" is classified as Grade B. Most of the cotton the factory used in FY 2011-2012 was Grade C (the width of 21"). In FY 2012-2013, the factory imported cotton from the United States for research purposes, but they have not yet created products.

There is no problem in supply of electricity and water as the supply is stable.

5. Work management

The factory offers training programs for their employees every year, and each section (spinning and weaving) has 4 courses. Duration of training for each course is 2 months for operation and 3 months for maintenance. The factory creates manuals and standardizes work methods. If new machines are installed, the factory has some employees receive training sessions at other factories that have already placed new machines. When the factory installed new machinery from China in 2011, they sent 3 employees for training to China (Tianjin) for three months.

The factory manufactures products with 2 shifts. However, the factory says that the current rate of operation is about 30% as there are not so many orders received. Furthermore, work is divided among SOE textile factories, and time is wasted. As Textile Enterprise as a whole, factories are not efficiently operated.

Work methods are standardized. But the rate of operation is low; thus, there should be a demand issue to be addressed before improving work management.

6. Cost control

Trend of the breakdown of cost of goods manufactured between FY 2009-2010 and 2011-2012 is that material cost accounts for 70% of cost of goods manufactured, and labor cost accounts for about 20%.

As mentioned earlier, domestic cotton farmers convert their crops to more profitable legume. Consequently, the supply of cotton declines, and the unit price of cotton continues to rise. There is a possibility that a rise in the price of domestic cotton becomes a factor to further increase cost of goods manufactured. The factory is planning to procure 500 tons of cotton domestically and 500 tons from abroad (the U.S., Australia, Egypt, India, etc.) in FY 2012-2013. With the abolition of the official foreign exchange rate in April 2012, procuring cotton from abroad becomes a factor for cost increase. We expect that it

becomes more difficult to control cost.

7. Equipment management / work environment

The factory was established in 1972 and facility is outdated. However, considering that the factory maintains machinery and 97% of them are reportedly operable, it can be presumed that equipment management and work environment are okay. Nonetheless, the rate of operation is low as the amount of production is low and there are many unused machines.

5.2.10.5 Observations on Distribution

We researched the following items to analyze distribution of SOE factories: 1) Market trend; 2) Marketing / sales strategy, sales plan; 3) Operating structure of distribution department, customer management; 4) Cooperation with external entities (wholesale, retail).

1. Market trend

Yarn, fabric, and bandages manufactured at the factory are not sold in the market, while blankets are sold in the market. As for yarn, fabric, and blankets, the market is dominated by inexpensive high quality imports from India and China. The market share of products manufactured by SOE textile factories is low.

2. Marketing / sales strategy, sales plan

Production is a made-to-order from the government, and the factory sells yarns, fabrics, and bandages to government agencies and the market. They also sell blankets to the market. The factory does not need to directly formulate marketing / sales strategies and sales plans. They are required to follow the top-down production plan determined by MOI.

3. Operating structure of distribution department, customer management

Including finished products (blankets) sold in the market, the factory ships out all products directly to government agencies. Products are 70% transported by truck and 30% by ship. Factory's semi-finished products are sent to the Paleik and Shwedaung factories for finishing, but some of them are shipped to the Sagaing garment factory that is located near the Sagaing factory. There are not so many clients, and the sales amount is small. Also, the factory has no discretion over changing the number of clients and amount of sales. Thus, we do not think that they are in the position to require customer management.

4. Cooperation with external entities (wholesale, retail)

Since the factory sells its products to government agencies and other SOE textile factories directly, there is no cooperation with external entities regarding wholesale and retail operations.

5.2.10.6 Issues

Based on the findings of the research, the following issues can be raised:

Management:

- There is little demand for the factory's products in the market, and their products are not competitive. It is difficult to expand their market share under the liberalized market.
- Since MOI has authority on management decisions and strategy formulation, general (factory) managers only have discretion over personnel matters, operation schedule, and so forth. General managers are not expected to be independent in terms of management; thus, they lack management qualification, abilities to create business plans, and knowledge of the principle of market mechanism.

Finance:

- Profitability (the rate of return on invested capital) of the factory is much lower than those of Japanese competitors. Especially, the rates of return on invested capital in both FY 2010-2011 and 2011-2012 are negative. Their products are low quality and facing fierce price competitions with imported products; hence, they cannot compete. It is very difficult to expect improvement in operating income.
- With regards to growth (monthly sales per employee, monthly operating income per employee), we expect a decline in sales price associated with price competitions and foresee that sales will decrease even though government demand is expected to be stable. Also, cost of goods manufactured such as the price of cotton is likely to increase; thus, it is difficult to anticipate improvement in operating income.

Production:

- Textile Enterprise has a production network based on the division of labor among 18 factories throughout the country. However, the production network is inefficient as the production system is not constructed to manufacture the appropriate amount of products in response to demand. The prospect for improvement is low.
- As the factory uses low quality domestic cotton and the facility is outdated, they cannot manufacture products that the market demands. Thus, demand for their products is low.

Distribution:

- The factory is located in the inland area and has no location advantage.
- Many of their clients are government agencies, and the factory is not able to independently formulate marketing and sales strategies. Thus, they cannot manufacture products that meet the market needs and are missing out on opportunities to generate additional earnings.

Pictures Taken at the Sagaing Factory in December 2012

5.3 Examination of Investment Possibilities

In this section, we conduct an examination of investment possibilities for the 10 SOE factories under research. We set up assumptions regarding the amount of sales, budget for capital investment, and other items based on the actual financial performance between FY 2009-2010 and 2011-12 and undertake financial simulations between FY 2012-2013 and 2015-2016. Based on the results obtained, we examine possibilities of investment by private sector companies for each SOE factory under research.

5.3.1 Assumptions used for financial simulations

We set the following assumptions in conducting financial simulations:

1) Undertook financial simulations between FY 2012-2013 and 2015-2016 based on FY 2011-2012 financial data adjusted with market foreign exchange rates (1USD = 800 kyats and 1EURO = 1,060 kyats) and other factors (See "Corrected" in the table below).
2) The amount of sales will be stable for the next 3 years (except for Htonebo), and the cost of imported raw materials will be settled using the market foreign exchange rates.
3) Increase in costs caused by rises in the raw material cost will not be passed on to the sales price.
4) The average number of employees will not change after March 2012, while the average personnel charge per employee will increase at an annual rate of 1.33%.
5) Budget for capital investment will be cut down by 20% annually across the board; however, this reduction will have no effect on production activities (the amount of sales, etc.)
6) From FY 2012-2013, income tax rate and state contribution rate will be reduced from 30% and 70% to 25% and 20%, respectively.

5.3.2 Investment possibility of each SOE factory

We undertook financial simulations using the actual performance data between FY 2009-2010 and 2011-2012 and aforementioned assumptions. Investment possibility for each SOE factory is as follows.

As for Heavy Industries Enterprise (1) Factory #1 (Vehicles & Components) in Htonebo, we set the assumptions that demand for their products (automobiles) will be stagnant and that sales of FY 2012-2013 will be a quarter of the corrected sales amount of FY 2011-2012. The factory will suffer from operating loss and have a low investment possibility from a financial perspective. On the other hand, Factory #14 (Diesel Engines) in Thargaya will see a rise in operating loss and in government fund account posted as liabilities. Net assets will be continuously negative for the next 3 fiscal years, and the factory's investment possibility is recognized to be low from a financial point of view. Moreover, operating income of Factory #16 (Agricultural Equipment) in Sinde will turn into a loss due to a rise in the cost of raw materials caused by the application of the market foreign

exchange rate. The factory requires financial assistance from the government to continue operations, and we estimated that their investment possibility is low.

As far as Heavy Industries Enterprise (2) Factory #22 (Radial Tyres) in Belin, we consider that net assets of the factory decreases due to continuous operating loss and that the amount of negative net worth increases. We also estimated that government fund account posted as liabilities also increase and consider chances that private sector companies invest in the factory are slim unless the government keeps funding the factory to achieve continuous operations.

For Heavy Industries Enterprise (3) Factory #31 (Cement in Thayet) and #32 (Cement in Kyangin), since the amount of fuel cost (such as natural gas) will rise to a large degree due to the application of the market foreign exchange rate, we estimated that operating income will fall into a loss and government fund account posted as liabilities will rise. We also expect chances that private sector companies invest in the factory are slim unless the government keeps funding the factory to achieve continuous operations. On the contrary, we estimated that the Kyaukse factory 's operating income will stay positive for FY 2012-2013, but profitability from FY 2013-2014 will largely decline due to the soaring fuel cost as we assume that the factory will not be able to use inland natural gas from that fiscal year.

As for Yangon Pharmaceutical Factory #1, even though we estimate that the cost of raw materials will rise due to the application of the market foreign exchange rate, operating income will decrease but stay positive. We also anticipate that negative net worth will turn positive thanks to the revision of income tax and state contribution rates. On the other hand, we expect that government fund account posted as liabilities will increase because of effects including high-level capital investment and see that chances that private sector companies invest in the factory are slim unless the government keeps funding the factory to operate continuously.

As far as Textile Factory #1 in Shwedaung and #3 in Sagaing are concerned, operating losses will increase and government fund account posted as liabilities will also rise. We estimated that net assets (already negative net worth) will not rebound to a positive level. Investment possibilities for these 2 factories are low from a financial simulation perspective.

As described above, many factories face low investment possibilities based on the result of the financial simulations. We assessed that, from a financial point of view, chances are slim for the factories to be targets for private sector investment since profitability worsens due to a rise in imported raw material cost associated with the application of the market foreign exchange rate. Additionally, the factories could fall into a much more severe situation than the simulated results if competitions with imported products intensify and sales decline.

However, if reform measures that could alter the simulation assumptions we have used were executed, the chances to attract private investment could significantly improve in the future. In the next chapter, we will report specific improvement plans for each SOE factory from perspectives of factory location, management / technological expertise, machinery, and brand recognition.

6. Options for Improvement and Recommendations of Privatization by State-owned Economic Enterprise Factories Surveyed

6.1 Recommendations from institutional and policy perspectives

6.1.1 Classification of SOEs / factories and restructuring plans based on classification

At present, the Myanmar government is focusing on cutting off unprofitable SOE factories from central government finance through JVs and leases and on transferring SOE factory employees to the private sector.

Some SOEs have public functions such as resources, electricity, and infrastructure; however, some SOEs such as the ones under MOI no longer serve a purpose of SOEs as they operate businesses under severe competitions with private sector companies and import goods.

Therefore it is recommended to classify SOEs into several categories according to the degree of their policy importance and profitability, and then to develop restructuring plans for each category. SOEs can be categorized into four groups as follows;

(1) Profitable and policy wise important state-owned enterprises and factories
(2) Profitable but for policy reasons, unimportant
(3) Unprofitable but important for policy reasons
(4) Neither profitable nor important policy wise

Restructuring plans should be prepared for each category. For category (1), as long as the importance remains, such SOEs should maintain its profitability via efficient management. Whereas for category (2), equitization or corporatization to improve its business efficiency is one of the measures to be taken, and JV and lease with private partners is another option. As for category (3), there are occasions in which the government decides to remain some factories as state-owned for policy reasons if it highly regards the importance of those industries concerned from the perspectives of strengthening or accumulating domestic technology as well as fostering domestic production. As such, continuous allocation of state budget of financing scheme will be required for the SOE concerned as well as measures to improve its profitability through enhancing the efficiency and productivity. For category (4), realistic options are closure of the factories and businesses; therefore, the main issues would be how to sell assets and reallocate SOE or factory employees.

6.1.2 Enhancement of legislations for corporate governance and SOEs

Currently, SOEs in Myanmar are understood to be out of the coverage of Corporate Act, and there are no legal provisions on the organization and management structure of SOEs. As the government is moving toward "Corporatization" upon accelerating privatization of SOEs, it would be necessary to enhance legislations on the management and operational structure and corporate governance of SOEs, eying the possibility of equitization and

privatization. Applying the relevant part of Corporate Act to SOEs might be also desirable.

6.1.3 Promotion of JV and lease through providing financial support to investors

No matter if private investors are interested in JV and lease of state-owned factories, private investors would face a necessity in investing a huge amount in facilities, as most of the equipment in state-owned factories are too old. However, financing for such capital investments might be one of the bottlenecks for JV and leasing, as it is not always easy for private investors to borrow bank loans. One of the examples is Shwedaung textile factory, in which several private investors are interested. Such private investors tend to say that they are interested in the factory, but they cannot make decisions due to the huge investment necessary for the renovation of the factory. Some of them said they look for foreign partners who can provide funds for investments.

Therefore, providing bank loans from a state-owned bank for such investments might be one of the possible measures to encourage JV and lease of state-owned factories.

6.1.4 Improvement in the investment environment for foreign enterprises

As mentioned above, when foreign companies consider JV and lease, they might be concerned with the following issues upon investment judgment:

- Possible intervention by the government on JV established under Special Company Act
- Issues of foreign investment law (inadequate business-to-business dispute settlement system),
- Undeveloped legal system on asset leases
- Undeveloped legal system on asset sales and valuation method of land usage rights.

In order to remove their concerns, it would be desirable to enhance the legal system to improve legal predictability on business activities of foreign companies in Myanmar.

6.2 Options for Improvement and Recommendations of Privatization by SOE Factories Surveyed

Based on findings of field research undertaken in November and December 2012, we describe options for improvement and recommendations in this section.

We categorized SOE factories targeted for this research into 4 groups (Group A, B, C, and D) based on our observation of the 10 factories and possible options of improvement. Current situation has the following four evaluation points: Factory location, managerial and technical expertise, machinery, and brand recognition. As for options for improvement, we raised 1) corporatization (not privatization), 2) joint venture (JV) with private partners, 3) lease, 4) full privatization, and 5) no option.

Figure 6-1. Overview of current conditions and options for improvement for 10 factories surveyed

Group	Enterprise	Factory	Current Situation		Options for Improvement
A	Heavy Industries (3) Pharmaceutical & Foodstuff	#33 Cement (Kyaukse) #1 Pharmaceutical (Yangon)	Factory Location	Good	1) Corporatize and give autonomy (not privatize) 2) Form JV with private partner with expertise in finance and production 3) Fully privatize
			Managerial & Technical Expertise	OK	
			Machinery	OK	
			Brand Recognition	OK	
B	Heavy Industries (1) Heavy Industries (2)	#14 Diesel Engines (Thargaya) #22 Radial Tyres (Belin)	Factory Location	Not Good	1) Lease 2) Form JV with private partner with expertise in finance, production and marketing 3) Fully privatize
			Managerial & Technical Expertise	Not Good	
			Machinery	OK	
			Brand Recognition	Not Good	
	Textile	#1 Textile (Shwedaung)	Factory Location	OK	
			Managerial & Technical Expertise	Not Good	
			Machinery	Not Good	
			Brand Recognition	Not Good	
C	Heavy Industries (3)	#31 Cement (Thayet) #32 Cement (Kyangin)	Factory Location	Not Known	While limestone reserve is still available, alternative fuel to expensive natural gas has not been identified to date. Search for affordable fuel continues.
			Managerial & Technical Expertise	OK	
			Machinery	OK	
			Brand Recognition	OK	
D	Heavy Industries (1) Textile	#12 Vehicles & Components (Htonebo) #16 Agricultural Equipment (Sinde) #3 Textile (Sagaing)	Factory Location	Not Good	None Nothing to appeal to private investors
			Managerial & Technical Expertise	Not Good	
			Machinery	Not Good	
			Brand Recognition	Not Good	

6.2.1 Group A: Dry Cement Factory in Kyaukse and Pharmaceutical Factory in Yangon

6.2.1.1 Current Situations

The dry cement factory in Kyaukse and pharmaceutical factory in Yangon are categorized in Group A. Common aspects of these factories are that they have a location advantage and managerial / technical expertise through a highly skilled production level and longtime operation, the rate of operation is relatively high with operable machinery, and their brand recognition is high (See Figure 5-3 in the previous chapter for factory location maps).

Since the dry cement factory in Kyaukse has a limestone quarry near the factory premises and is relatively close to the northern market and coal mines that can be used as alternative fuel to natural gas, the factory has a better location advantage compared to the other 2 cement factories in Thayet and Kyangin. The Kyaukse factory

started operation in 2003 and has enough technical expertise on dry cement production to provide training to other factories' employees. Although clinker is leaking from a kiln, machinery is relatively new and the factory achieves about the 70% rate of operation with 3 eight-hour shifts a day. Brand of SOE cement is established, and their brand recognition is high.

However, the Kyaukse factory currently receives cheap inland natural gas, but supply of inland natural gas is to be stopped after the completion of the LNG pipeline between Rakhine State and China. The factory will have to alter fuel they use from inland natural gas to either offshore natural gas or coal. If the factory uses offshore natural gas, we estimate that their operating income turn to a loss. On the other hand, the factory uses coal, their cost of fuel will increase and their price competitiveness against imported products will be low. It is significant for the factory to anticipate future cost increase and control cost to accomplish continuous operations.

The pharmaceutical factory in Yangon is located in Yangon, the biggest market in the country, and has a location advantage. The factory has been in operation since its establishment in 1958 and has managerial and technical expertise. Even though the factory has renewed and newly established facilities 3 times in recent years, most of the machinery is outdated. But, the rate of operation is relatively high at about 80%. They sell their products with a brand name of BPI, and their brand is highly recognized in the country.

Furthermore, the Yangon pharmaceutical factory relies 60% of raw materials on imports, and the abolition of the official foreign exchange rate is a factor of cost increase. Government demand is expected to be stable, but, it is important for the factory to lower the procurement cost of raw materials.

6.2.1.2 Options for Improvement and Recommendations for Privatization

Taking into the current situations, we think that the cement factory in Kyaukse and pharmaceutical factory in Yangon could stay competitive and ensure profitability without government assistance. Thus, we recommend the following options for improvement: 1) Corporatize and give autonomy (not privatize); 2) Form a JV with a private partner with expertise in finance and production; or 3) Fully privatize.

The Kyaukse cement factory has a location advantage and has room for facilities expansion thanks to its huge premises. We consider that the factory can improve the level of technology and management knowledge, expand facilities by utilizing their vast land, and repair their facilities through cooperating with private sector companies. Moreover, the pharmaceutical factory in Yangon also has a location advantage and has high brand awareness. We think that the factory can improve the level of technology / management knowledge and renew their outdated facilities. As described above, we anticipate that the factory's competitiveness will be further strengthened and profitability will improve if private sector companies engage in factory operations. Hence, we recommend these 2 factories choose and execute among the 3 options mentioned above (corporatization, JV, and full privatization).

6.2.2 Group B: Diesel Engine Factory in Thargaya, Radial Tyre Factory in Belin, and Textile Factory in

Shwedaung

6.2.2.1 Current Situations

The diesel engine factory in Thargaya, radial tyre factory in Belin, and textile factory in Shwedaung are categorized in Group B. Common aspects of factories in Thargaya and Belin are that their location advantage is low, managerial and technical expertise is limited due to their dependence on overseas technology, their machinery is quite new, and brand recognition is low. Moreover, the factory in Shwedaung has a location advantage, but their expertise on new technology is nil because they are using outdated machinery, and brand awareness is low.

The diesel engine factory in Thargaya is located in the inland area and has little location advantage. They manufacture products using Chinese technology and raw materials with a knockdown system; therefore, technical knowledge is not accumulated in the factory. Additionally, since their products compete with imported products from countries like China and only few of them are sold in the market, brand recognition is extremely low. However, the factory is established in 2009 and their facilities are new.

There are natural rubber plantations near the radial tyre factory in Belin; thus, the location is highly advantageous in terms of procuring rubber materials. But their location advantage is not so high from perspectives other than procurement of natural rubber. Even though the factory uses Chinese technology, they only started operations about 3 years ago and it cannot be necessarily said that they have a high level of technical expertise. Further, their brand awareness is low because competition with domestic and imported products is severe and the factory cannot manufacture the size of tyres the market demands. However, the factory started operations from 2010 and their machinery is new.

The textile factory in Shwedaung is located in the inland area, but has a location advantage because it is relatively close to Yangon and has vast grounds. The factory was established in 1980, and their facilities are outdated. Although a part of their facilities was renewed in 2004, the most of the machinery is outdated and the rate of operation is low. Moreover, the factory products are not competitive because the factory does not have technological expertise to manufacture new products and manufactures products using low quality and relatively expensive domestic cotton. Hence, only few of their products are sold in the market, and brand recognition is extremely low.

6.2.2.2 Options for Improvement and Recommendations for Privatization

Considering their loss-making operations, we estimate that it will be difficult for the diesel engine factory in Thargaya, radial tyre factory in Belin, and textile factory in Shwedaung to stay competitive and ensure profitability without government assistance. However, if they can receive assistance from private sector companies, we think that it is possible for those factories to improve their competitiveness and profitability. Therefore, we recommend the following options for improvement: 1) Lease; 2) Form a JV with a private partner with expertise in finance, production, and marketing; or 3) Fully privatize.

Facilities of Thargaya's diesel engine factory and Belin's radial tyre factory are new. Additionally, there are natural rubber plantations near the Belin factory; hence, raw materials can be easily procured. We consider that these factories can improve the production know-how / procurement methodology of raw materials, invest in manufacturing new products, and market their finished products through cooperating with private sector companies. Moreover, the textile factory in Shwedaung is relatively close to Yangon and has room to expand. We think that the factory can renew and modernize their facilities by utilizing their vast grounds, provide support on importing raw materials and on marketing finished products through cooperating with private sector companies. As such, we anticipate that the factory's competitiveness will be further strengthened and profitability will improve if private sector companies engage in factory operations. Hence, we recommend these 3 factories choose and execute among the 3 options mentioned above (lease, JV, and full privatization).

6.2.3 Group C: Wet Cement Factories in Thayet and Kyangin

6.2.3.1 Current Situations

The wet cement factories in Thayet and Kyangin are categorized in Group C. Common aspects of both factories are that while it is possible for them to obtain limestone, they still need additional research regarding their location advantage, they have managerial and technical expertise thanks to longtime operations, but they cannot cope with modern mass production, facilities are operable, and brand is widely recognized.

Although both factories are able to procure raw materials such as limestone, they still need additional research as far as their location advantage is concerned. Their many years of cement production experience provided them with managerial and technical expertise; however, their production system cannot cope with modern mass production as they pack cement in 50kg bags and cannot manufacture in bulk. Facilities of the Thayet factory are mainly installed in the 1960's from Japan and are outdated. The factory renewed part of the facilities in the 2000's and operate facilities while they maintain them. But, the factory is not operating at full capacity. Facilities of the Kyangin factory are introduced in 1971 and are also outdated, but they operate machinery while they maintain them as well. Furthermore, brand awareness of cement manufactured by SOE factories is high, and much of their cement is used for public works. As for the cement industry, we expect that demand will increase as demand for construction rises.

Common issues for both factories are that they use a wet cement manufacturing process which is more costly than a dry process and that they presently utilize more expensive offshore natural gas as inland natural gas they used as fuel was depleted. Also, they have an issue in competing with domestic and imported products in terms of price since they use expensive offshore natural gas. A supply price of offshore natural gas delivered to the factories is discounted and set at 5 USD per million BTU until May 2013 (usually set at around 11USD per million BTU), but the price to be applied after June 2013 is not yet determined. Therefore, if the supply price is set at around 11 USD per BTU, that is, the price set for export, factories' profitability will worsen. Also, fuel

expense till FY 2011-2012 was not expensive since they used the official foreign exchange rate. However, we estimate that operating income will turn to a loss after FY 2012-2013 because factories settle fuel expense using the market rate and that their price competitiveness against imported products will be low. Despite the fact that factories consider using alternative fuel such as coal in order to operate continuously and negotiate to lower the gas price and receive a long-term supply of gas with Ministry of Energy, they have not yet found a concrete solution to date.

6.2.3.2 Options for Improvement and Recommendations for Privatization

Given the fact that wet cement factories in Thayet and Kyangin suffer from high fuel expense and cannot use alternative fuel to offshore natural gas, we think that it is difficult for them to remain competitive without government assistance and ensure profitability. Moreover, we assume that it is difficult for them to improve their competitiveness and profitability even with the help of the private sector. Thus, we do not consider that corporatization, lease, JV, and full privatization are the option for improvement. In other words, government subsidy is essential in order for both factories to operate continuously.

6.2.4 Group D: Vehicles and Components Factory in Htonebo, Agricultural Equipment Factory in Sinde, and Textile Factory in Sagaing

6.2.4.1 Current Situations

The vehicles and components factories in Htonebo, agricultural equipment factory in Sinde, and textile factory in Sagaing are categorized in Group D. Common aspects of these factories are that they have little location advantage, cannot manufacture products the market desires even though they possess managerial and technical expertise through long-time operations, have outdated facilities, and their brand recognition is extremely low.

The vehicles and components factory in Htonebo is located in the inland area and has little location advantage. The factory has not accumulated technical expertise since they manufacture automobiles with a knockdown system. The factory started operation in 1974, and facilities are outdated. They face a severe competition with imported used cars from countries like Japan. They sell few of their products in the market, and brand awareness is very low due to their poor reputation. Furthermore, demand including that of government agencies is declining, we expect that it is highly likely that the factory's profitability in FY 2012-2013 worsens to a large degree.

The agricultural equipment factory in Sinde is located in the inland area and has little location advantage. The factory was established in 1965, and their facilities including casting are outdated. Competition with imported products from China and other countries is intense. They cannot strategically market their products, and their brand recognition is extremely low.

The textile factory in Sagaing is located in the inland area and has little location advantage. Facilities that started production in 1972 are outdated. The factory renewed part of their facilities in the 2000's, but most of them are outdated, and the rate of operation is low. Also, they are not competitive in the market since they do not possess technological knowledge of manufacturing new products and manufacture products using low quality and relatively expensive domestic cotton. Hence, their products are not sold in the market, and brand recognition is extremely low.

6.2.4.2 Options for Improvement and Recommendations for Privatization

The vehicles and components factories in Htonebo, agricultural equipment factory in Sinde, and textile factory in Sagaing were established as import substitute plants to serve a purpose of industrialization in the area. They import raw materials and manufacture a small amount of products. They cannot compete with imported products in terms of both price and quality. Considering their low product competitiveness (low demand), outdated facilities, and disadvantageous locations, we expect that, even with government assistance, it will be difficult for them to make a profit with a few orders from the government in the midst of the ongoing trade liberalization. Further, we anticipate that it is also hard for them to improve competitiveness and profitability even if they receive assistance from the private sector. Therefore, we do not consider that corporatization, lease, JV, and full privatization are the option for improvement. We recommend that these 3 factories examine measures to effectively utilize factories' assets again by transferring knowledge and skills of factory workers to the private sector and by selling factory premises and facilities in a highly transparent manner.

End.