

A Study on the Market of Imported Medical Devices in Myanmar*

Bae, Hong Kyun**

-
- I. Introduction
 - II. Medical-device Exporting Countries to Myanmar Market
 - III. Trade Intensity of Medical Devices in Myanmar
 - IV. Conclusion
-

Key words: Medical Devices, International Trade Flow, Trade Intensity, Medical Device Market

I . Introduction

In the medical-device industry, the production of traditional labor-intensive medical devices tended to be transferred to the Asian countries in 1990s.

* This research was supported by Sangji University Research Fund, 2014.

** Professor, Department of International Trade, Sangji University.

And due to the global economic crisis, the developed countries began to cut off their public medical services and welfare funds, looking for cost-efficient, excellent medical devices as its alternative and leading to the more demand creation for the devices in Asian region which in turn took a very important opportunity for growth in those devices.

In this regard, the medical-device market of Myanmar in the recent Asian region is where the influences of Thailand, China, India and Singapore are being shown considerably with the lift-up of economic sanctions by America and the West. However, although the global capital and liberalization have widened the openness and the international concerns, the relative Myanmar's medical environment demands an active assistance and improvement.

In the meantime, the medical-device industry has a close relationship with governments' medical policy and is the field where there are very high barriers for entering its market. Though Korean medical-device industry is obvious to be in poorer situation than the medically advanced countries in terms of technology, capital and recognition degree, the industry has been recognized as one of the most stable ones, while the government is determined to balance its trading balance by localization of various medical-device and equipment, and driving new policies for creating medical-device markets in the newly emerging Asian region, especially in Myanmar.

Accordingly, it would be important to perceive the medical-device state and the movement of their key items in Myanmar, as the poorest of the South-East countries, for the sake of improving and advancing the country's poor medical environment and healthcare services.

So, the study, with keen acknowledgment of the importance of medical-device industry, analyzes the market state of medical devices, emerging as the core project of knowledge-based industry. In a comprehensive consideration of geographical adjacency to Myanmar and export concentration, 8 out of the representative, medically advanced countries were selected. The study also purports to find out and get idea of what to be promoted further, together

with the consequential political suggestions, in relation with the relative export-concentrated degrees and the growth of the market, through analyzing the key medical-device items in comparison with inter-nation trade intensity.

II. Medical-Device Exporting Countries to Myanmar Market

1. Myanmar's Medical Market

Myanmar, with the economic sanctions by the international society and the indifference from its junta government, has been perceived one of the most poor in the medical environment. Of the usual Myanmar household's budget, over 70% of Engel index is estimated to be spent for food. Myanmar, once known as "Asia's rice grower", has been left to deem medical services as the costly luxury to most Myanmar people, due to the extremely unstable food situation.

Of the current 58 million of its population, over 70% is living out of cities so as to be exposed to only limited medical services. They are getting the individuals-paying medical services, rather than the regular government-pay ones, due to the extreme gaps of living standards between cities and rural areas. That is to say, in 2009-2010, Myanmar people spent an average of \$12 annually per person for the health care expense, \$2 out of which is subsidized by the government with the rest to be on account of NGOs and the patients themselves.¹⁾ The ratio of patients' personal payment of medical services is over 80% of the total medical expenditure, which shows the public

1) UN, "2011 United Nations in Myanmar-United Nations Strategic Framework 2012-2015", 2011.

expenditure of health care is extremely low, compared with those of neighboring countries. WHO announced that despite the recent increase in medical assistance from the governmental level, Myanmar is still severely suffering from the poorly equipped hospitals and shortage of medical stuff including a variety of medicine. Of course, though NGOs and temples are supplying humanitarian assistance in limited areas, it is much hard for Myanmar to meet full medical demands.

Therefore, in the transit of Myanmar's junta government to quasi-civilian one, the new government quadrupled the medical budget which still falls far short of the expectations.²⁾ Most of the budget is spent for labor expense for the medical employees. The situation is to the point that when any heavy disease or accident occurs, it has be dealt with loan form the social networks or unofficial, high-interest-rate lender. Although the Myanmar governmental authorities want more Myanmar populace including the unofficial laborers to enjoy the health care benefits, there is a gap between the policy and its execution.

At present, Myanmar which is going through a radical social chance, hopes that through its openness toward, and medical cooperation with, the west it will improve its medical environment. As the country will be in a vaulting period for increased demand for its market in the near future with widening medical budget, it is presumed to be a high effect of tapping into its market preemptively, for the medically advanced, and its neighboring, countries alike.³⁾

2) Zee Phyu Kwin, "Myanmar's healthcare system broken under military rule", Firstpost, 2012.12.

3) CRC shadow Report Burma, "The plight of children under military rule in Burma, Child Rights Forum of Burma, The center for public health and human Rights", John Hopkins, 2011.4.

2. Key Medical-Device Exporting Countries to Myanmar Market

As the key power for medical-device market's growth will be attributable to the coming of aging society of developed countries, the expansion of social movement for wellbeing and the medical-service-related demands from the rapidly growing industrializing countries such as China, India, Myanmar and others, the medical-device market has an ever-expanding prospect.⁴⁾

At present, the US's medical-device industry is acknowledged as the most competitive in the world with the development of its innovative medical-device designs in its domestic and overseas markets.⁵⁾ Of the world's top 10 medical-device manufacturers, 7 are US ones, the result of which may be attributable to the high level R&D investments, compared with those of EU's and Japan's industry concerned, and the inflow of efficiently enormous venture capitals. The US, in earlier 2012 after lifting up the economic sanctions against Myanmar, promoted a new cooperative medical partnership with Myanmar to advance into American researchers and colleges, through which Myanmar is expecting its medical services will be improved.⁶⁾ And as Germany, another medically advanced country, also is gradually advancing to Myanmar's medical-device market, armed around varying diagnostic imaging devices, some rich Myanmar people are even going to Germany for their medical treatment. Meanwhile, Major countries in the northeast Asia, including the Japan, China, and South Korea are ranked among the biggest medical device markets in the world.⁷⁾ These three counties are currently

4) Bae, H.K., "A Study on the medical devices in Korea, U.S., and China", *The International Commerce & Law Review*, Vol.59, 2013.8.

5) U.S. International Trade Commission, "Medical Devices and Equipment: Competitive Conditions Affecting U.S. Trade in Japan and Other Principal Foreign Markets", Investigation No. 332-474, Publication 3909, 2007.

6) Ronald Daniels, Pe Thet Khin, Peter C. Agre, "Bringing Health Research to the Renewed U.S.-Myanmar Relationship", *Science & Diplomacy*, 2013.1.

7) AMDD, "Comparison of market environment for medical devices in Japan, China, and

undergoing different phases of development, both in overall terms and more pertinently, in the growth of the respective medical device markets. Presently, Korea, China and Japan alike show their ever-increasing influence in Myanmar's medical-device market.⁸⁾ Especially, Chinese market for imports of medical devices evolved over the past few years from a small “niche” to a strategic market—challenging the marketing strategies of established medical device manufacturers.⁹⁾ Accordingly, China, which has such benefits as its geographical adjacency with Myanmar, a time-honored, consistent investment increase and the mutual cooperation between both countries, has a considerable trading share of medical-device trading there, the phenomenon of which is quite unlike Japan which joined the economic sanctions against Myanmar by the US and the West.¹⁰⁾ In the meantime, recently Korea is gradually increasing its medical-device exports through varying economic cooperations too.

3. Medical-Device Exporting Countries adjacent to Myanmar Market

In 2012, the total value of the ASEAN medical device market was more than \$4 billion. This is expected to increase to \$8 billion by 2017. But unlike mature markets in the EU and Japan, ASEAN's market for medical devices is significantly under-penetrated.¹¹⁾

At present Myanmar's adjacent countries have a core project of escalating the speed of improving the medical-device quality and advancing the

Korea”, AMDD, 2011.

8) 米国医療機器-IVD工業会, “Comparison of market environment for medical devices in Japan, China, and Korea”, AMDD, 2011.

9) Andrew Chen, “The Chinese Medical Device Market”, INSIGHT, 2010.

10) Invest Japan Department, “Japan's Growing Major Market for Pharmaceuticals and Medical Devices—Moving toward the cutting edge”, JETRO, 2009.

11) Ames Gross and John Minot, “ASEAN Medical Device Regulatory Integration”, MPO Magazine, 2009.2.

products' technical level for its industry, while Asia's key countries advanced into the Myanmar's medical-device market since the US, Germany and others had left Myanmar after the economic sanctions against it, resulting in a considerable trade concentration that country around Thailand. Under this circumstance, Myanmar people who are much interested in health care services are on a trend of going abroad to adjacent countries to get the best medical services for relatively low cost. Though since 2000 for Myanmar people, Hospitals in Singapore are thought to be the option for suitable medical treatments, as equipped with excellent medical staff and advanced medical facilities, they have a weak point of the expense being 50% higher than that of Thailand. India is preferred at present for Myanmar people's medical treatments. The reason Myanmar's patients prefer India is such as the advanced medical services, the similar climate and food with Myanmar and other strong point in terms of expenses compared with those at Singapore.

Under these realities, it seems likely that in Myanmar's medical-device market, its adjacent countries enjoy the market control, with their ever increasing influence emanating from the cultural similarity, which phenomenon is surely to be a different level of influence, as shown by such medically advanced countries as the US and Germany in China after they advanced there under a strategic policy about a certain market.

III. Trade intensity of Medical Devices in Myanmar

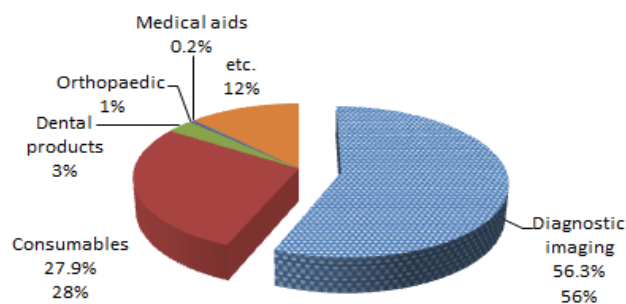
As of 2012, Myanmar had the per capita income of \$835, as the lowest in the ASEAN region and belonged to the low-income countries the World Bank classify. However, until recently Myanmar has ended up with receiving relatively minimal level of the international aid, compared with that of its neighboring countries, mainly due to the conflicts with America and EU, the result of which coupled with its government's lack of medical services-assisting policy is worsening further its medical environment. In this regard,

Myanmar seems to be determined to attract active investments on a governmental level, hand in hand the international aid-organizations presently in cooperation with its government to improve the public health care and medical environment. Accordingly, away from the pre-existing competitors there, it seems likely Korean businesses need to actively tap into the market with Products suitable to the local market environment.

1. Myanmar's Medical-Device market

Myanmar, where there are only poor medical facilities, is on a trend to import medical devices with the diagnostic imaging devices and the basic supplies as main items. The former items are of high prices taking a big share in Myanmar's import market, and then, the need for basic supplies such as syringes, the needles and others are very high (refer to Figure 1). Though until recently, imported medical devices are not so easily found, the demand for equipment related to X-ray, backbone, bones and cardiology is on an increasing trend.

〈Figure 1〉 the state of Myanmar's medical-device imports



When viewing the medical devices imported to Myanmar, the country is very active in transactions with items mainly imported from China and India. In 2010 China won the first place to export medical devices in the sum of

\$5.69 million, which accounted for 30.7% of the total amount of \$18.56 million Myanmar spent for importing them, India the runner-up with 5.3%.

〈Table 1〉 Medical-Device exporting records to Myanmar(2010)

(Unit: \$1,000)

	China	Japan	India	Singa.	U.S.A.	Total
Export Volume	5,694 (30.7%)	3,220 (17.4%)	982 (5.3%)	856 (4.6%)	706 (3.8%)	18,557 (100%)
Consumable	1,647	1,106	382	226	3	5,171
Diagnostic imaging	2,661	1,794	377	482	557	10,444
Dental Products	324	111	10	-	12	555
Orthopaedic	43	6	8	27	-	85
Medical aids	29	0.8	-	-	-	33
Etc.	990	202	205	82	135	2,269

In case of medical supplies(syringes, bandages and so on), China's and India's export sums account for 31.9% and 7.4% respectively of Myanmar's total import sum, showing the medical-device exporting structure being concentrated relatively on low-cost items. As the low-cost medical devices imported from India are actively being transacted, Japan which ranked the 3rd place in 2010 to provide aid to Myanmar has been maintaining very amicable relationship with the country. Its medical-device export, also, was \$3.22 million as of 2010 accounting for 17.4%(second place) of Myanmar's total import, while the US, which exported in 2010 \$0.71 million, ranked the 5th place. As the economic sanctions have been alleviated since 2011, US companies have been active in advancing into Myanmar market, making it possible to assume that its export has been increased both in dollar amount and Market share(Please refer to the Table 1).

〈Table 2〉 Our country's annual exporting record of medical devices to Myanmar

(Unit: \$1,000, %)

	2007	2008	2009	2010	2011	2012	Average annual growth rate
Export Volume	353	605	192	406	1,048	2,294	45.4
Consumables	316	265	16	274	274	213	-7.6%
Diagnostic imaging	29	50	118	110	633	1,276	112.9
Dental products & Orthopaedic	-	2	1	4	38	307	239.3
Medical aids	-	-	26	1	481	210	101.3
Etc.	7	288	32	18	56	287	107.7

In the meantime, the export record of our country was \$0.35 million in 2007 and \$2.29 million in 2012, showing an annual growth of 45.4%. The share of diagnostic imaging devices showed an increasing trend since 2010, ending up with recording 55.6% in 2012, while the other items showing varying shares of 9–to–13%. And the supplies export which accounted for 89.5% of the total medical-device export in 2007 was decreased, while diagnostic imaging devices, dental and plastic items have been considerably increased recently.¹²⁾ When viewed in specific HS codes, the 2012 shares taken by the top 3 exporting items(supersonic-wave, diagnostic imaging device(901812), the other devices(901890), electric diagnostic devices(901810)) account for 64.9%〈Please refer to Table 2〉.

12) KHIDI, “2012 Medical Devices Market Research Reports”, Korea Health Industry Development Institute, 2012.

2. Trade intensity of major exporting countries on Myanmar

In order to figure out how much the important 8 countries exports have been relatively concentrated on Myanmar, it will be helpful to examine the 2012's transition trend of trade intensity.¹³⁾¹⁴⁾〈Table 3〉 In selecting the subject countries of transaction, first were chosen Thailand and Singapore in South-East Asia, and India in South-West Asia, all which countries are geographically adjacent and expected to advance fast in medical-device industry. Secondly were chosen the US and Germany, both of which enjoy a considerable influence in global market as the advanced medical-device countries. Thirdly, were chosen China, Korea and Japan as the subject countries.

When viewing the trade concentration of the key 8 countries which have

-
- 13) Trade intensity analysis, concentrates the structure of departures of actual trade flows from flows. The index of intensity of country i's export trade with country j is defined by where X_i , X_j , and $X_{..}$, represents the total export of country i, total import of country j, and the total import volume of world trade respectively.

$$I_{ij} = X_{ij}/X_i / (X_j/X_{..}) \dots\dots\dots (1)$$

X_{ij} is country i's export to country j, X_i is country i's total export volume, X_j is country j's total import volume, $X_{..}$ is the total import volume of world trade.

In other words, trade intensity index is dividing the portion that country j has in the total export volume of country I with the portion of country j's total import volume in the total import volume of world trade.

Formula (1)'s value is 1, and if $I_{ij} > 1$, it signifies that the portion of the export to country j in the total export volume of country i, and the total import volume of country j's in the total import volume of world trade is bigger, and also the export of country i is relatively concentrated on country j.

On the contrary, $I_{ij} < 1$ means that the export of country i is not relatively concentrated on country j, and $I_{ij} = 1$ means that the export of country i to country j is in line with the portion of the total export volume of country i and the portion that the total import volume of country j in the total import volume of world trade, so the export of country i to country j is relatively balanced. This trade intensity index enables the analysis of each country at certain point of time, and comparison of time series at the same time, and helps with the analysis of the relative concentration change of the export of country i to country j.

- 14) Park, S. C., "A Comparative analysis of Patterns of Trade in Korea and ASEAN", Korea Institute for Economics & Technology, 1989.

high share of trading with Myanmar, those countries which showed the high trade intensity of over 10 were Thailand(57.313), Singapore(13.797), China (11.651) and Korea(10.220) in order. In particular, of Thailand's total export, it was showed that the export share for Myanmar was more than the one Myanmar's total import sum take out of the world's total import sum, meaning that Thailand's export is focused relatively on Myanmar (refer to Table 3).

Meanwhile, when viewing through the analysis of their trade intensity¹⁵⁾ with Myanmar, the US and Germany both have little relative concentration degree.

〈Table 3〉 Major exporting countries' trade intensity change with Myanmar

Country Year	Major exporting countries' trade intensity change with Myanmar							
	KOR→ MMR	USA→ MMR	CHN→ MMR	JPN→ MMR	DEU→ MMR	IND→ MMR	SGP→ MMR	THA→ MMR
2012	10.220	0.179	11.651	6.625	0.382	7.654	13.797	57.313

Source : UN Comtrade, Estimated yearly.

What is worth of attention is that as a result of analyzing the comprehensive trade intensity of the 8 countries, Myanmar shows a very strong concentration degree on Thailand with Singapore, China and Korea following up. It is also seen the US and Germany both have no strong relative concentration on Myanmar. This can be attributable to the realities that trading between the countries whose industrial circumstances are similar with one another shows higher percentage than between the countries whose industrial circumstances vary more or less. In other words, the countries Myanmar prefer as trading partners are those which are equipped with relatively little heterogeneity in geographical adjacency and culture, compared

15) I. Yamazawa, "Intensity Analysis of World Trade Flow", *Hitotsubashi Journal of Economics*, Vol. 10, No. 2, 1970.

with the US and Germany.¹⁶⁾

3. Trade intensity of Major exporting countries on Medical Devices in Myanmar

The medical devices industry of Myanmar is in urgent need for improvement on medical conditions such as insufficient medical devices and equipment, and the importance of demand for medical devices is gradually increasing due to high maternal mortality rate and increased mortality from major diseases. Accordingly, to examine export concentration of medical devices in Myanmar, trade intensity of each item in Myanmar and 8 major countries was examined. Items of medical devices were divided into diagnostic imaging devices that take up about 1/3 of the entire global market, dental products with increasing marketability from increase in aging population, and consumables for which there is high demand for importation in Myanmar.¹⁷⁾

1) Diagnostic imaging

Taking into account the current status of the global market for each group

16) UN Comtrade, <<http://comtrade.un.org>>, accessed June 2014.

17) The definition of Medical device based upon the harmonized system of commodity classification(HS). As a result of the wider definitional changes, this study uses the commodity-based HS definition. The new definition of Medical device includes five major categories: diagnostic, dental, consumables:

* Diagnostic imaging: 901812(Ultrasonic scanning apparatus), 901819(Electro-Diagnostic Apparatus, nes), 902214(X-rays apparatus, medica)

* Dental products: 901849(Instruments and appliances, used in Dentistry), 940210 (Dentists, barbers or similar chairs and parts), 300640(Dental cements and other dental fillings, bone cements)

* Medical Consumables: 901831(Syringes, with or without needles), 901832(Tubular metal needles and needles for sutures), 901839(Needles, catheters, cannulae etc, (medical)), 300510(Medical dressings etc. having an adhesive layer), 300590(Medical dressings etc except those with adhesive layer).

of medical devices,¹⁸⁾ diagnostic imaging was found to take up 25.8% of the overall market with size of 66.6 billion USD in 2010, and it is responsible for the largest amount (about 10 million USD) and importance among medical devices imported in Myanmar. As a result of selecting items with the ease of data collection for analysis on representative nature, importance of transaction and trade intensity in Myanmar for diagnostic imaging, HS 901812(Ultrasonic Scanning Apparatus), 901819(Electro-Diagnostic Apparatus, nes) and 902214(X-rays apparatus, medica) were selected. Each item can be analyzed in details as below.

〈Table 4〉 Trade intensity of diagnostic imaging by item

901812(Ultrasonic Scanning Apparatus)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	226.548	9.231	74.857	37.148	8.298	97.083	116.477	582.602
901819(Electro-Diagnostic Apparatus, nes)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	1.406	0.041	1.079	0.211	0.139	0.055	0.598	6.641
902214(X-rays apparatus, medica)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	40.851	150.215	1130.612	52.216	44.469	70.984	589.877	1983.689

Source : Same as Table 3.

Trade intensity of 901812 (Ultrasonic Scanning Apparatus) is as shown in 〈Table 4〉, and high trade intensity is shown by all trade partners in terms of relative concentration of exportation by item. Especially unlike Thailand, Singapore, India and China with high geographical proximity, Korea shows extremely high relative concentration of export at 226.548. Trade intensity of

18) <http://www.espicom.com/world-medical-market-forecasts>

the United States and Germany, countries that can be regarded as developed countries in medical devices, is also not low at 8~9.

Considering trade intensity with Myanmar during the analysis period for 901819(Electro-Diagnostic Apparatus, nes), countries other than Thailand, Korea and China had almost no relative concentration of export. In general, Thailand shows superior concentration for this item over China, India and Singapore in Myanmar, implying that Myanmar relies its importation heavily on Thailand.

In relative concentration of export for 902214(X-rays apparatus, medica), Thailand and China have absolutely high trade intensity for this item in Myanmar. Mostly, other trade partners including the United States and Germany show high trade intensity of two digits or more.

2) Dental products

For analysis of trade intensity of dental products among 8 countries, representative nature, importance of transaction and quotable items of UN data were prioritized in selecting items. HS 901849(Instruments and appliances, used in Dentistry), 940210(Dentists, barbers or similar chairs and parts) and 300640(Dental cements and other dental fillings, bone cements) items were selected for dental products. Accordingly, each item can be analyzed in details as below.

〈Table 5〉 Trade intensity of dental products by item

901849(Instruments and appliances, used in Dentistry)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	10.598	1.965	126.285	10.183	2.588	501.141	42.723	1422.612
940210(Dentists, barbers or similar chairs and parts)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	0.000	0.093	0.240	0.000	0.000	3.882	170.125	5.293

300640(Dental cements and other dental fillings, bone cements)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	27.682	0.000	1.646	1.981	6.837	57.560	49.683	21184.537

Source : Same as Table 3.

Relative market concentration of export for 901849(Instruments and appliances, used in Dentistry) item is as shown in trade intensity of<Table 5>. In general, exportation of dental products by Thailand is focused on Myanmar. Concentration of dental products is shown in the order of Thailand and Myanmar, China, and Singapore, and Korea and Japan are showing similar intensity value of 10.

For trade intensity of 940210(Dentists, barbers or similar chairs and parts) by item, Singapore showed relatively concentration of dentist chairs and parts in Myanmar. While Thailand and India respectively showed intensity over 5 and 3, other countries show almost no concentration for Myanmar.

In trade intensity of 300640(Dental cements and other dental fillings, bone cements) item, Thailand shows absolutely and extremely high intensity in Myanmar for dental cements and fillings. India, Singapore and Korea are showing two-digit intensity in this particular order. It is noteworthy that Germany shows relative concentration of 6 or higher for dental cements and fillings in Myanmar while showing almost no concentration for other medical device.

3) Consumables

As a result of selecting items of consumables, which can be considered to have the second highest importance of importation in Myanmar, based on representativeness, importance of transaction and the ease of collecting UN data, HS 901831(Syringes, with or without needles), 901832(Tubular metal needles and needles for sutures), 901839(Needles, catheters, cannulae etc, (medical), 300510(Medical dressings etc. having an adhesive layer) and

300590(Medical dressings etc except those with adhesive layer) items were selected. Accordingly, each item can be analyzed as below.

〈Table 6〉 Trade intensity of consumables by item

901831(Syringes, with or without needles)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	0.011	0.061	19.541	3.173	0.225	27.822	2.133	7.895
901832(Tubular metal needles and needles for sutures)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	75.499	57.038	181.949	12.893	0.031	20.251	6.393	26.463
901839(Needles, catheters, cannulae etc, (medical))								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	0.283	0.056	29.635	1.939	0.169	48.069	9.354	24.189
300510(Medical dressings etc. having an adhesive layer)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	6.061	2.198	339.704	2.485	0.633	8.692	25.407	2031.667
300590(Medical dressings etc except those with adhesive layer)								
	KOR- MMR	USA- MMR	CHN- MMR	JPN- MMR	DEU- MMR	IND- MMR	SGP- MMR	THA- MMR
2012	5.026	0.413	13.405	0.001	0.836	0.074	14.999	79.561

Source : Same as Table 3.

Relative market concentration of export for 901831(Syringes, with or without needles) item is as shown in trade intensity of 〈Table 6〉. In terms of trade intensity by item, India and China had high concentration for syringes in Myanmar. Thailand that had considerable concentration on other items did not show relatively high concentration for this item. For the rest, Korea, the United States and Germany had almost no relative concentration.

In trade intensity of 901832(Tubular metal needles and needles for sutures) item, these needles used during surgical procedures for suture showed high trade intensity of China, Korea and the United States. Especially, while the United States did not have high importance of trade intensity for medical devices in Myanmar, its intensity was high for 902214(X-ray apparatus, medica) and 901832(Tubular metal needles and needles for sutures) items.

As an item for internal catheter and cannulae(tube inserted to inject drugs into body or extract body fluid), trade intensity of 901839(Needles, catheters, cannulae etc, (medical)) was found in the order of India, China, Thailand and Singapore. Korea, the United States and Germany were found to have almost no concentration. This is because the former countries took advantage in price competition due to low production cost and low distribution cost from geographical proximity.

As an item for medical adhesive bands and plasters, trade intensity of 300510(Medical dressings etc. having an adhesive layer) item is extremely intense for Thailand at 2,031.667, followed by China and Singapore. Korea, the United States and Japan excluding Germany are showing intensity of 2 or higher.

300590(Medical dressings etc except those with adhesive layer) item consists of absorbent cottons, gauze, bandages, dressings and poultices. Unlike most items showed concentration in India, this item showed rapid reduction in exportation since 2010. The ratio of India in overall importation of Myanmar is less than 1%. Most are imported from China and Thailand, and there are concerns for importation of defective products at low price. For the rest, Germany, the United States and Japan were found to have no concentration.

4. Market analysis on countries exporting medical devices to Myanmar

As a result of examining trade intensity of diagnostic imaging, dental products and consumables for 8 major countries in the medical devices

market of Myanmar, diagnostic imaging takes up the largest amount and ratio of importation on medical devices in Myanmar. Especially unlike Thailand, Singapore, India and China which show high intensity because of high geographic proximity, Korea shows high relative concentration of export. Concentration for electrical diagnostic devices in Myanmar was dominantly high for Thailand, showing remarkable import dependence of Myanmar on Thailand. Dental products are generally showing concentration of Thai exportation to Myanmar. In particular, dental cements and fillings have absolutely and extremely high intensity in Myanmar market.

For consumables, the item with second highest ratio of importation in Myanmar, India and China had high concentration for syringes in Myanmar. Concentration was mostly shown in the order of India, China, Thailand and Singapore. This competitiveness probably resulted from low production and transportation cost due to proximity and low wage. In addition, as shown by the analysis on medical devices of major export countries in Myanmar, the United States and Germany mostly have their trade intensity concentrated on advanced diagnostic imaging, X-ray and treatment devices with high added values and integration of diverse technologies instead of electrical diagnostic devices and consumables.

Accordingly, it would be necessary for Korean companies to avoid low price competition with medical devices imported from China and India in Myanmar and develop and supply products that integrate multi functions appropriate for the local market conditions and fixed-mobile convergence medical platforms, detouring fierce competition with advanced medical devices of developed countries.¹⁹⁾

19) WHO, "Myanmar Launches Immunization Intensification Programme to Protect More Children", WHO Global Immunization News, 2012.10.

IV. Conclusion

The medical industry has been recently going through a change of its paradigm from the management of diseases to the medical services. Its priority is their prevention rather than treatments. As this phenomenon is emerging mainly in Asia, Myanmar once used to maintain a strong medical-education system. While the nation seems to need a certain of time to return to the same state, it is also likely that there should go first a promise of specific medical advances and cooperation, not simply financial aid, in terms of health-care medication from international community.

The Key medical-device items can be analyzed according to inter-nation trade intensity. As a result, implications are obtained as follows.

First, as Myanmar wishes to benchmark the economic development model of Korea, advanced medical device technologies and equipment of Korea can be considered as another target of investment. As Myanmar is experiencing the lack of medical devices, equipment and basic medicines, it seems strategically advantageous to promote medical cooperation through a consortium that offers packages of medical technologies, equipment and medicines. In other words, a practical approach to public health and medical areas is needed because of corruption and inefficiency of the military government in Myanmar which has prevailed for long. At present, as Myanmar is promoting the maternal, toddlers' and children's healthcare as the priority policy, it seems likely that there be a kind of assistant businesses coupled with private-and public-sectors together in the field, and the interaction or access to profitability in the long term.

Second, In other words, there is a need of advancing into the market of medical devices through any medical assistance, and systematic consultancy of building social safety network, with a close bilateral cooperation. Accordingly, rather than following the medically advanced businesses of enormous brand-power and capitals, since there is a need to maximize the

use of our strengths in pioneering a new market for diagnostic devices, dental products and consumables, it is necessary to host local collaboration events in Myanmar, exchange with institutions of Myanmar related to medical devices, and invent projects to transfer domestic medical devices technologies. With promotion of market informatization on medical devices by Myanmar, advancement of Korea into Myanmar was delayed compared to other medically developed countries, and domestic public institutions must exhibit a synergistic effect through global cooperation.

Third, once accessibility is improved and supply of public medical services increases by the government policy oriented on basic medical services following expansion of medical budget in Myanmar, developed countries centered on the United States and Germany will start to actively and strategically secure this market. Therefore, Korean medical devices companies and authorities must differentiate their strategies for each item. Selective entry strategy differentiated into idle and aged medical devices and integrated cutting-edge medical devices in Korea and customized entry strategy should be applied as appropriate for the medical devices market between urban-rural bases and regions in Myanmar.

Fourth, it also seems necessary to build a stronghold to export Medical devices in Myanmar through Thailand, which remained to be a major country of export to Myanmar despite economic sanction by the United States and Western world. For medical devices companies trying to newly enter the market, it can be a practical approach to advance to Myanmar via Thailand by taking a detour around the market barriers and risks in Myanmar. In addition, as companies that have branches and subsidiaries in Southeast Asia such as Singapore and Thailand receive customs-free benefit through FTA with Southeast Asia and can overcome customs duties, financing, various regulations and cultural barriers, it would be advantageous to enter the market in Myanmar according to the stepwise market flow instead of engaging in direct advancement. Above all, it is desirable for Korean businesses should secure competitiveness by taking advantage of their

strong points through available market-accessing strategies as customized items. In closing, Yet Systematic Medical device classifications are still in need for depth analysis.

REFERENCES

- AMDD, “Comparison of market environment for medical devices in Japan, China, and Korea”, AMDD, 2011.
- Ames Gross and John Minot, “ASEAN Medical Device Regulatory Integration”, MPO Magazine, 2009.2.
- Andrew Chen, “The Chinese Medical Device Market”, INSIGHT, 2010.
- Bae, H.K., “A Study on the medical devices in Korea, U.S., and China”, *The International Commerce & Law Review*, Vol.5 9, 2013.
- _____, “A Study of Export Platform’s Activation Plan on Public services”, *The International Commerce & Law Review*, Vol. 61, 2014.
- CRC shadow Report Burma, “The plight of children under military rule in Burma, Child Rights Forum of Burma, The center for public health and human Rights”, John Hopkins, 2011.4.
- Espicom, The World Medical Markets Factbook, 2011.
- I. Yamazawa, “Intensity Analysis of World Trade Flow”, *Hitotsubashi Journal of Economics*, Vol. 10, No. 2, 1970.
- Invest Japan Department, “Japan’s Growing Major Market for Pharmaceuticals and Medical Devices—Moving toward the cutting edge”, JETRO, 2009.
- KHIDI, “2012 Medical Devices Market Research Reports”, Korea Health Industry Development Institute, 2012.
- Kim, Y. J., High-tech medical device industry and R&D Investment, *The Korean institute of Electrical Engineers*, Vol. 58, No. 1, 2009.
- Ministry of Strategy and Finance, “Promotion Plan for Medical Device Industry”, 2010.
- Park, Hyun Chae, “How to Enhance International Competitiveness of Korean Pharmaceutical Industry with CEPA as a Momentum?”, *The International Commerce & Law Review*, Vol. 48, 2010.
- Park, S. C., “A Comparative analysis of Patterns of Trade in Korea and

- ASEAN”, Korea Institute for Economics & Technology, 1989.
- Ronald Daniels, Pe Thet Khin, Peter C. Agre, “Bringing Health Research to the Renewed U.S.–Myanmar Relationship”, Science & Diplomacy, 2013.
- U.S. International Trade Commission, “Medical Devices and Equipment: Competitive Conditions Affecting U.S. Trade in Japan and Other Principal Foreign Markets Investigation”, No. 332–474, Publication 3909, 2007.
- WHO, “Myanmar Launches Immunization Intensification Programme to Protect More Children”, WHO Global Immunization News, 2012.10.
- Zee Phyu Kwin, “Myanmar’s healthcare system broken under military rule”, Firstpost, 2012.12.
- UN, “2011 United Nations in Myanmar–United Nations Strategic Framework 2012–2015”, 2011.
- 米国医療機器-IVD工業会, “Comparison of market environment for medical devices in Japan, China, and Korea”, AMDD, 2011.

ABSTRACT

A Study on the Market of Imported Medical Devices in Myanmar

Bae, Hong Kyun

The medical-device market of Myanmar in the recent Asian region is where the influences of Thailand, China, India and Singapore are being shown considerably with the lift-up of economic sanctions by America and the West. However, although the global capital and liberalization have widened the openness and the international concerns, the relative Myanmar's medical environment demands an active assistance and improvement. The study, recognizing the importance of Medical-Devices and their market conditions emerging as key business for knowledge-based industry, aims to obtain consequential meaningful suggestions, pursuant to relative export-concentration and sustainable market growth of Medical Devices, by analyzing inter-nation trade intensity for key Medical Device items. To do so, this study selected 8 nations in total by reviewing three points: core Medicine-advanced countries, geographically adjacent countries to Myanmar, and relative export-concentration.

Key Words : Medical Devices, International Trade Flow, Intensity Approach, Medical Device Market