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Chapter 6

Impact of Raw Material Import Duty Reduction System on Promotion of International Waste Trading

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Abstract

This chapter pointed out from case studies in Asian countries that the structural impacts of a raw material import duty reduction system on promoting international waste trading. Export industries in Asian countries avoid inconvenient procedures and taxes, so it seems difficult for local recycling companies to collect scrap and recyclable materials. And this chapter discussed that the policy implications of win-win international waste trading between Japan and Asian countries, compared with the operation of the Basel Convention and the trade management systems of Japan, Singapore and Hong Kong.

Keywords: Basel Convention, export-oriented industrialization policies, free trade agreement(FTA), economic partnership agreement (EPA)

Introduction

Hazardous waste is imported to Japan from Asian countries every year. According to the Japanese Ministry of Environment, based on standards set by the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), the amount of hazardous waste imported between 1999 and 2008 was 41,291 tons, of which 95% was imported from Asian countries. Almost all hazardous waste was exported by Japanese companies based in Asian countries. Japanese enterprises did not treat hazardous waste but rather exported it to Japan.

What problems do Japanese enterprises in Asian countries face? There is no doubt that the decade 1999 to 2008 corresponds to the recovery from the Asian currency crisis and the global financial crisis, but Asian countries supply products to the world

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and are seen as promising, emerging markets. We also cannot assume that Asian governments did not take measures to invest in waste recycling and treatment infrastructure. In fact, waste recycling and treatment industries in Asia, including those of Japan, have continued to develop.

Let us begin with an investigation of the reasons that hazardous waste is imported to Japan, establish hypotheses and verify our conclusions from field surveys and a literature review.

The first section describes our hypothesis that the cause of hazardous waste imports is not only due to problems of physical infrastructure such as a shortage of waste recycling and treat facilities, but also problems of legal and systematic infrastructure such as law enforcement, recycling costs, technology levels, and proper disposal collateral. The second section focuses on raw material import duty reduction systems in export-oriented industrialization policies, and the third section investigates the impact of this system on the promotion of international waste trading with China, Thailand, Philippine, Indonesia, Vietnam and Malaysia. Finally, the fourth section looks at the policy implications of win-win international waste trading between Japan and Asian countries, compared with the operation of the Basel Convention and the trade management systems of Japan, Singapore and Hong Kong, where import parts, off-specs and processing waste are subject to a raw material import duty reduction system.

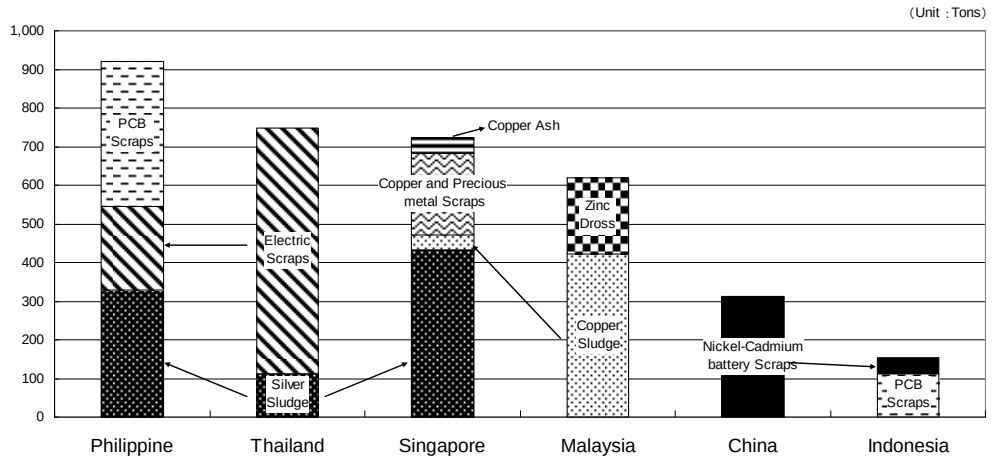
While several studies have looked at waste recycling, treatment infrastructure, and policies with regard to international waste trading, little attention has been given to promoting international waste trading through a raw material import duty reduction system for export industries. Sasaki (2007) showed with a case study in Thailand that international waste trading was encouraged due to a raw material import duty reduction system and a block to the development of recycling industries, indicating the possibility that other Asian countries have similar structures.

6.1 Background of hazardous waste imported to Japan from Asian countries

According to the Japanese Ministry of Environment, based on the Basel Convention, 3,514 tons of hazardous waste was imported from all Asian countries in 2008. By country, the largest exporter was the Philippines, at 932 tons, followed by Thailand with 763 tons. The largest single item amount was electronics scrap from Thailand at 636 tons (Figure 1). Data were gathered from 779 Japanese enterprises in Asian counties.

Results showing that it is difficult to recycle and treat waste such as electronics scrap and sludge correspond well to those shown in Figure 1 (Kyushu Bureau of Economy, Trade and Industry [2003])[2]. However, we cannot conclude that there is a shortage of waste recycling and treatment facilities from these results (Figure 2, 3).

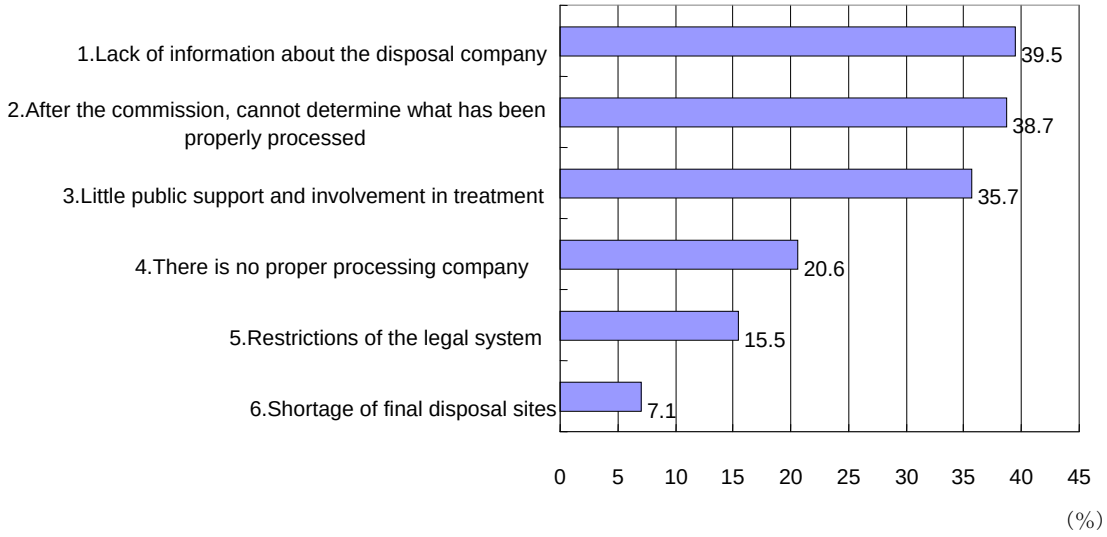
Figure 1 Amount of hazardous waste imported based on Basel Convention in 2008



Sources: Ministry of Environment, Japan

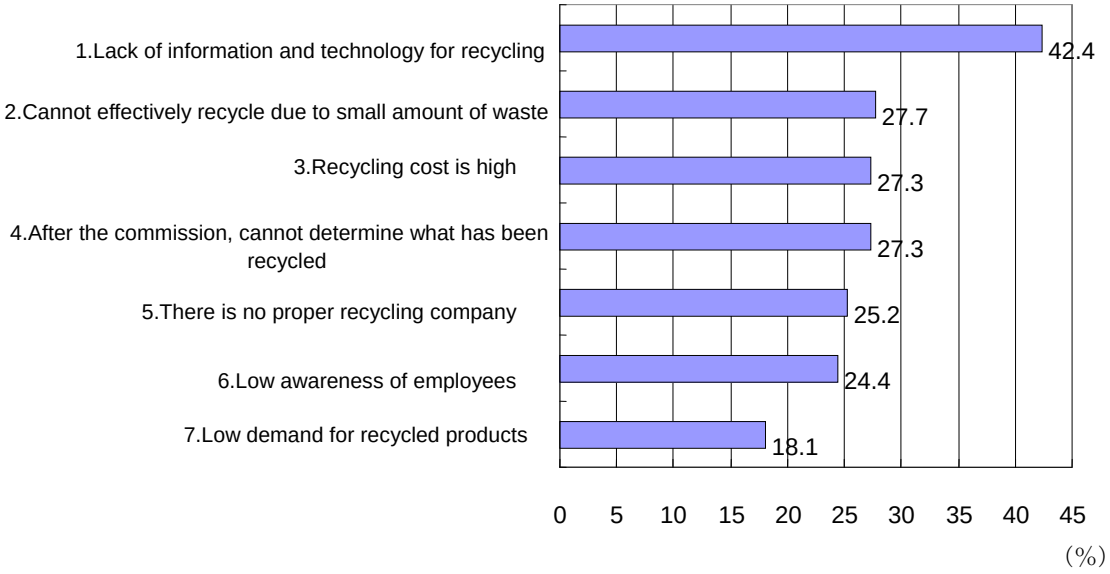
[2] In these survey results, waste oil, waste plastic, glass cullet, and containers polluted by chemical are excluded from the definition of hazardous waste imported to Japan.

Figure 2 Problems of waste disposal of Japanese enterprises in Asian counties



Sources: Kyushu Bureau of Economy, Trade and Industry [2003]

Figure 3 Problems of waste recycling of Japanese enterprises in Asian counties



Sources: Kyushu Bureau of Economy, Trade and Industry [2003]

According to a questionnaire conducted by the Kyushu Bureau of Economy, Trade and Industry in 2003, when asked about problems with waste disposal, "Lack of information about the disposal company" was the most common response at 39.5%, followed by "After the commission, cannot determine what has been properly processed" at 38.7%. "There is no proper processing company" was only 20.6%.

In regard to problems with waste recycling, "Lack of information and technology for recycling" was the most common response at 42.2% of respondents followed by "Cannot effectively recycle due to small amount of waste", “Recycling cost is too high”, and "After the commission, cannot determine what has been recycled” were all reported by 27.3% of respondents, and "There is no proper recycling company" was reported by 25.5%.

Furthermore, Asian recycling and treatment industries, including Japanese recycling industries, have developed. Sasaki(2008) and Mitsubishi UFJ Research and Consulting (2009a) show that it is possible to recycle and treat waste such as that shown in Figure 1 and in the questionnaire.

Hence, it is important to recognize that the problems of the recycling and treatment industries in Asia are not only problems of physical infrastructure such as a shortage of recycling and treatment facilities, but also systematic problems related to issues such as law enforcement, recycling costs, the level of technology, and proper disposal collateral. These reasons are not irrelevant in the discussion of hazardous waste imports to Japan from Asian countries. I will now discuss the systematic problems in greater detail using cases studies of Japanese recycling industries in Asia.

6.1.1 Case study of recycling company D in China

Recycling company D is owned by a major Japanese nonferrous smelting company and was founded in 2003. They recover precious metal and treat hazardous waste from electronics scrap, plating waste, and so on that is generated by foreign-invested and especially Japanese companies across Jiangsu province in China. The treatment process is the same as that in Japan and utilizes incineration at high temperatures and dry and wet processing.

Shimada (2005) says that as a condition of China's metal recycling, pre-treatment, copper smelting, lead smelting, zinc smelting, and precious metal refining requires advanced technology integration, and points out that there are issues with the technology.

In the course of doing business in China, it is necessary to build trust with local

companies with regard to sampling and analysis of scrap with precious metal content. Shimada (2005) points out that it is difficult to ensure traceability of waste as it is often sold into the secondhand market or as exported products. Because of local institutions, it is often difficult to track factory scrap beyond the province through hazardous waste and customs regulations. In terms of technology, local companies utilizing dry processing have no concerns about air pollution and do not use secondary combustion furnaces to dispose of waste after recovering gold.

As a result, Company D is at a disadvantage compared to local companies, because local companies might reduce environmental costs so that they can offer a higher price for waste than D to compete for the scarce resources (JETRO Beijing Center[2009:79-81]).

6.1.2 Case study of Recycling Company H in Thailand

Japanese recycling company H established their subsidiary in Thailand in 2003 to recycle scrap generated from small and medium sized Japanese electronics manufacturers. The two reasons for focusing on small and medium-sized customers were 1) It is more difficult for them to manage industrial waste and 2) The stringent quality requirements of Japanese manufacturers, who are their main customers, lead to poorer waste yields.

Recycling company H built up their own recycling network linking Japan and Thailand in order to improve their recycling rate after separation and dismantling. Utilizing the network, they increase the number of items purchased from customers, reduce processing cost, and provide low service prices. They cannot treat waste in Thailand so it is returned to Japan to ensure the recycling flow shown in the original manifests for guaranteed traceability.

However, in 2006 the subsidiary was sold by the Japanese headquarters to a local company following decreased profitability. Soaring commodity prices had led to increased difficulty in collecting electronic scrap. This, combined with price competition and the increased costs of providing a Japanese level of recycling technology, led to lower profits.

6.1.3 Summary

In both cases, the Japanese recycling companies had a high level of recycling technology and services to ensure proper recycling and tracking. However, competition with local companies led to intense price competition that hampered their ability to

collect waste and recyclable materials. In other words, the current situation of the recycling market in Asia is that “bad money drives out good". The problems of systematic infrastructure go deep into the heart of the recycling market in Asia.

On the other hand, those Japanese companies that recycle hazardous waste by importing to Japan have higher price competiveness than Japanese recycling companies that use the local recycling market in Asia. This is because the international trade of hazardous wastes requires additional transaction costs related to advance notice and consent procedures to comply with the Basel Convention as well as the usual customs.

Therefore, although the systematic infrastructure problems are key factors in the importation of hazardous waste into Japan, it is difficult to explain it with these reasons alone. I will now examine the raw material import duty reduction system which has been established in Asian countries in the following sections.

6.2 The Raw Material Import Duty Reduction System for Export Industries

In terms of developing economies, Asian countries commonly adopt export-oriented industrialization policies including material import duty reduction systems (Table 1).

Table 1 Material import duty reduction system in Asian countries

Country	Related Law
Indonesia	No.111/PMK.010/2006
	No.129/KMK.04/2003
Thailand	Refund of parts and material import duties for export by clause 2 of customs law of Article 19
	Reduction of tariff to goods kept based on bond scheme
	Exemption from taxation to article brought in to free zone (FZ)
	Exemption from taxation to article brought in to export processing zone (EPZ)
	Exemption from taxation to article and material import duty for export based onThe Board of Investment (BOI) scheme
China	Tariff measures on processing trade
Philippine	Customs Administrative Order-CAO, No.12-2003
Vietnam	Circular 04/2007/TT-BTM
	Official Letter 4537/TCHQ-KTTT
Malaysia	Exemption from customs duty to product put on Free Zoon (FZ)

Sources: JETRO website

To quote Amano (2005: 7) in a study of economic development in Asia and international

division of labor by Japanese companies, “although the contents of export-oriented industrialization policies are characterized by individual countries and regions, the policies oblige foreign companies to export their products in return duty exemption, the import permit on materials or equipments, and giving such a benefit of tax reduction for foreign companies in Asian Countries”. This remark is very interesting, because the raw material import duty reduction system obliges foreign companies to export their products.

In general, waste scrap is generated in stamping, off-specs, and inferior goods which occurs about 10 to 20% by product weight basis during final assembly of assembled parts from suppliers. Hence, when parts and raw materials using raw material import duty reduction system become process waste, it is necessary to know whether this waste is processed or recycled.

6.3 Case Studies of the Impact of Raw Material Import Duty Reduction Systems on Promotion of International Waste Trading

This section discusses how export industries recycle and treat waste materials using the case studies of China and Thailand, where parts and raw materials using a raw material import duty reduction system become process waste.

6.3.1 The case of China

E & E solutions (2005:106-107) says that Japanese export industries must adhere to the following rules and regulations.

Export industries must pay a “value added tax” and follow procedures such as weight measurement and evidence photography if they sell scrap used in a raw material import duty reduction system for Chinese domestic recycling companies. If they sell scrap from a Free trade Zone (FTZ), they must to pay a “value added tax” and an “export tax”. Therefore, Japanese companies have different ideas and levels of support for value-added tax and valuable waste.

Exporting to Japan can be a way to avoid the value-added tax. Companies export as scrap, send back as defective products, or sell to Japan as material rather than waste. If they export it, they do not have to pay tax. Export costs tend to be cheaper than recycling costs in China.

When companies employ local companies for collection and recycling, they must use companies assigned by the environmental protection department and customs

department of the province, treating industrial waste as a commodity with value.

Companies sometimes export waste as products to Hong Kong from China, where traders then re-export the goods to China. China and Hong Kong signed the Closer Economic Partnership Agreement (CEPA) in 2004, so import and export tariffs are free (Shinkou Research [2008: 136]).

6.3.2 The Case of Thailand

In Thailand, a raw material import duty reduction system has been adopted by the Board of Investment (BOI), and many export industries use this system. Recycling and waste processing is conducted in the following manner.

When export industries sell off-specs and process waste to a domestic recycling company, they must pay a "value added tax" and "export tax" which is based on the sales price. If they use local companies to collect and recycle, they must ask a BOI officer to inspect. Inspection takes 30 to 40 days and costs 5000 Baht each time.

Inevitably, export industries select recycling companies located in EPZ or Duty Free Zones (DFZ). Export industries get two advantages in avoiding both inconvenient procedures and taxes.

If a recycling company based in an EPZ or Duty Free Zone (DFZ) accepts hazardous waste, they must export to Japan based on Basel Convention regulations, but may export to Hong Kong or Singapore without following Basel Convention rules. In the latter case, it is recognized as non-hazardous waste. They prefer to export to Hong Kong and Singapore, because of less strict customs inspection compared with Japan and Free Trade Ports.

On the other hand, domestic recycling companies not located in FTZ or DFZ, have the issue of tax. According to UNI Copper Trade LTD, an electronic waste recycling company, export industries must pay not only a "value added tax" and "export tax", they can also be charged a fee of four times the initial tax if they fail to pay and customs discovers this(JETRO[2004: 2-61]). Thus, UNI Copper Trade LTD established a related company in a FTZ in 2007 to expand the collection amount.

6.3.3 The Case of Other Asian Countries

In the Philippines, if export industries located in FTZs approved by the Philippine Economic Zone Authority (PEZA) use local companies to recycle their scrap, they are charged a tax. Therefore, Japanese recycling companies based in the Philippines have two factories inside and outside the FTZ to collect scrap. Philippine Business for the

Environment is a Non-Governmental Organization which negotiates with the PEZA for local recycling companies to collect scrap, and schedules events several times per year to collect scrap duty free from FTZs.

In Indonesia, if export industries sell off-specs and process waste to domestic recycling company, they must to pay an “export tax”, and ask a customs officer for an inspection.

In Vietnam, export industries also use recycling companies which export to other countries when parts and raw materials from a raw material import duty reduction system become process waste.

In Malaysia, export industries located in the Free Zone (FZ) are exempt from import taxes on the condition that they export more than 80% of their products. Thus, when export industries sell off-specs and process waste to a domestic recycling company, they must pay a tax. On the other hand, recycling companies are charged a 10% export tax if they export scrap from domestic companies. Consequently, recycling companies located in the FZ do not benefit from collecting scrap from domestic companies. So it seems reasonable to conclude that the domestic and FZ recycling markets in Malaysia are more separated than in other Asian countries.

6.3.4 Summary

As mentioned above, we can conclude that a raw material import duty reduction system has an effect on promoting international waste trading, because export industries avoid inconvenient procedures and taxes, so it becomes difficult for local recycling companies to collect scrap and recyclable materials. Consequently, this can be considered to be one factor in the importation of hazardous waste to Japan from other Asian countries.

However, it is not easy to analyze the quantitative impacts of raw material import duty reduction systems on promoting international waste trading, because raw materials in a duty reduction system are converted to products (and HS Code), and are exported as semi-products or sundries.

6.4 On Policy Implications of Win-Win International Waste Trading Between Japan and Asian Countries

It was pointed out in the previous section that export industries prefer to export to Hong Kong and Singapore because of less strict customs inspection compared to Japan and Free Trade Ports. This section discusses the reasons for the import tax, Free Trade

Agreement (FTA) and Economic Partnership Agreement (EPA), and derives policy implications of win-win international waste trading between Japan and Asian countries.

With regard to import taxes, it is easier to export process waste under a raw material import duty reduction system to Hong Kong and Singapore because they are free trade ports. However, according to the Japanese Run tariff (January, 2010), most recyclable materials are tax-free except for items such as rare metal scraps (Table 2).

Table 2 Japanese tariff rate and amount of import of recyclable materials in 2009

HS-Code	Description	Tariff rate（%）	amount of import (kg)
7204.50010	Remelting scrap ingots of alloy steel	5.7	0
7204.50020	Other remelting scrap ingots of alloy steel	4.1	21,367
8112.22000	Waste and scrap of Chromium	4.1	6,039
8112.29000	Other Waste and scrap of Chromium	5.2	88,634
8112.52000	Waste and scrap of Thallium	4.1	0
8112.59000	Others of Beryllium, chromium, germanium, vanadium, gallium, hafnium, indium, niobium (columbium), rhenium and thallium, and articles of these metals, including waste and scrap	5.2	33
8112.92100	Unwrought waste and scrap, powders of vanadium	3.0	214,604
8112.92200	Unwrought waste and scrap, powders of indium	5.2	54,185
8113.00000	Cermets and articles thereof , including waste and scrap	5.0	34,850

Sources: Customs and Tariff Bureau, Ministry of Finance, Japan

As a result, we cannot conclude that it is easier to export process waste using a raw material import duty reduction system to Hong Kong and Singapore, which are free trade ports, because most recyclable materials are also tax-free in Japan.

It has been pointed out that Japan is somewhat FTA or EPA delayed compared to other Asian countries, but I am dubious that this is the reason that export industries prefer to export to Hong Kong and Singapore, because a JETRO analysis has shown that Japanese export industries in Asia already have advantages without FTA and EPA with regard to import taxes (JETRO [2009]). Consequently, the structural impact of a raw material import duty reduction system on the promotion of international waste trading will not soon change even if FTA and EPA are implemented further.

Field surveys of recycling companies reveal that a procedure based on the Basel Convention is needed when dealing with the Japanese government, but not needed when dealing with Hong Kong and Singapore if the exports are off-specs of printed circuit boards. It seems reasonable to conclude that Hong Kong and Singapore

have less stringent customs inspection of Basel Convention regulations than Japan[3].

In these circumstances, what policy implications can we derive with regard to win-win international waste trading between Japan and other Asian countries?

In Japan, under the Ministry of Economy, Trade and Industry's International Promotion of the 3Rs and the 3R initiative, each country must first make a considerable effort to construct a sound domestic recycling system for recyclable resources. In addition, recyclable resources that cannot be recycled in each country should be utilized efficiently between Asian countries to reduce consumption of natural resources while preventing the expansion of environmental pollution. Rare metals especially are essential resources for manufacturing in industries such as automotive, IT and others, so it is important for the Asian region to construct a sound domestic recycling system (METI [2009]).

It was also pointed out in this chapter that the impact of a raw material import duty reduction system for promoting international waste trading may not change much soon and export industries will prefer to export to certain countries because of less strict customs inspection compared with Japan even if the Asian region were to construct a sound domestic recycling system with Japanese support. With regard to the recycling of rare metals, technologies combining dry and wet recycling used by Japanese nonferrous smelting companies are more efficient and environmentally friendly than local Asian wet recycling. Japanese technology for nonferrous smelting is essential for recycling rare metals that are not now recycled[4].

Therefore, it seems reasonable to conclude that it is necessary for Japanese strategic policies such as a deregulation of domestic rules pertaining to the Basel Convention in order to expand the import amount of recyclable materials for nonferrous smelting. These strategic policies might lead to a misunderstanding with other Asian countries. However, most high performance materials which are made from rare metals can be made in only Japan, so Japanese manufacturers supply high performance materials to Asian countries and final products are assembled in Asian countries. With this supply chain of materials, parts, products, and waste, it is possible to re-examine the strategic policies and policy implications of win-win international waste trading between Japan and Asian countries. A further direction of this study will be to provide

[3] It is less probable that officials in Hong Kong and Singapore admit that the Basel Convention is loosely enforced in their regions. However, imports to Singapore and Hong Kong of e-waste not approved by the Basel Convention are reported by Kojima (2005: 125-127) and Mitsubishi UFJ Research and Consulting (2009b: 76-92).

[4] According to field surveys of Japanese nonferrous smelting companies, the yield of local recycling companies in Asia is about 80 percent, local recycling companies in Asia sometime request Japanese nonferrous smelting companies to recycle 20 percent of residue.

more evidence on environmental impact assessments and material flow analysis. More research on international waste trading in both manufacturing and recycling industries is necessary[5].

Conclusion

This chapter showed from case studies in Asian countries that it is important to recognize that the problems of recycling and treatment industries in Asia are not only problems of physical infrastructure such as a shortage of recycling and treatment facilities, but also problems of systematic infrastructure such as law enforcement, recycling costs, the level of technology, and proper disposal collateral. We also showed the structural impacts of a raw material import duty reduction system on promoting international waste trading.

It is concluded that a raw material import duty reduction system as a part of an export-oriented industrialization policies as adopted by some Asian countries has an effect in promoting international waste trading. Export industries avoid inconvenient procedures and taxes, so it seems difficult for local recycling companies to collect scrap and recyclable materials.

What needs to be emphasized is that it is possible to re-examine strategic policies such as deregulation of domestic rules regarding the Basel Convention to expand the imported amount of recyclable materials for nonferrous smelting. There are also policy implications for win-win international waste trading between Japan and Asian countries, on account of the structural impacts of raw material import duty reduction system on promoting international waste trading will not change even if FTA and EPA are further implemented and export industries prefer to export to countries with less strict customs inspection compared with Japan. A further direction of this study will be to provide more evidence on environmental impact assessments and material flow analysis. More research is also necessary with regard to international waste trading in both manufacturing and recycling industries.

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[5] For example, Shimizu and Sasaki (2009) examine the material flow in each country of Asia of the rare earth permanent magnets, and consider how recycling contributes to the sustainable supply of the raw material in the entire supply chain.

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