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THE IMPACT OF THE IMPLEMENTATION OF TEMPORARY IMPORT PROCEDURE ON ELECTRONIC PRODUCTS: INPUT-OUTPUT ANALYSIS

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Abstract

Currently, imported electronic products enter the Indonesian market using general import procedures, where the importer has to pay the import duty and taxes in full rate. In the absence of proper recycling systems, the electronic products that have reached their end of life and those are no longer used, end up in the landfills. Some researchers found hazardous materials inside the electronic products that could contaminate water, soil and air. Therefore, another strategy is needed to avoid negative effects on the environment. The Temporary import policy is one of the import procedures under Customs administration control, which states that goods can only be imported for a specific period, and should be re-exported afterwards. This paper tries to analyze the impact of the implementation of the temporary import policy on electronic products. By employing the Input-Output Analysis to the data from the Statistic Central Bureau and Indonesian Customs, this paper identified the impacts of the proposed procedure to some sectors in the Indonesian input-output table, namely: import activity, waste management and recycling system, transportation and storage, and final demand. The result shows increasing in quantity to be re-exported, and potential benefit from transportation and warehousing, leasing and rental services, and other business.

Keywords: customs; electronic waste; input-output analysis; temporary import procedure

1. Introduction

Electronic products can come from domestic industries or import. Indonesia imports a lot of electronic products from many countries, such as China, Japan, European countries (Siringoringo, 2013; Siringoringo, Sri, Kowanda, & Saptariani, 2013). Since electronics products are intended for commercial purposes, they are imported under the general import procedure, by paying normal duties and taxes. The normal import duty is calculated by multiplying the normal tariff rate with the value of goods.

After all customs obligations are fulfilled, the goods can be released from the customs area to the importer's warehouse for redistributed to the domestic market. Each product will eventually be in the hands of consumers up to the End of Life (EoL) or the time when they are no longer used. After that, the goods will end up in the disposal places, either directly or indirectly, as electronic waste or e-waste without any suitable handling (Grant et al., 2013; Kiddee, Naidu, & Wong, 2013). E-waste should be dealt with promptly by the government given its material content that can contaminate soil, water and air. Many researchers have

provided information on the metallic and chemical content of each electronic product that could potentially harm human health, other living things and the environment in general due to their capacity to contaminate the air, water and soil (Fu et al., 2007; Chung & Murakami-suzuki, 2008; Tang et al., 2009; WCO, 2012).

Some informal handling procedures carry out the disposal work without the use of appropriate technology or processes (Kojima, Yoshida, & Sasaki, 2009; Chi, Streicher-Porte, Wang, & Reuter, 2011). The number of such processes are growing continuously due to the potential economic benefits obtained from processing of electronic waste (e-waste) without considering the dangerous or negative impact to the environment (Chi et al., 2011; Gupta, Modi, & Saini, 2014). This condition is expected to get worse, especially in countries that do not have adequate recycling factories for e-waste, such as Indonesia (ASEAN Network, 2009; Gupta et al., 2014).

Developed countries such as Japan, China (Bo & Yamamoto, 2010), and the European countries (Araceli & Dios, 2015), have especially anticipated the management of e-waste by developing national regulations and establishing a recycling factory specifically for e-waste. One of the solutions being implemented by several developed countries is the requirement of producers of each product to recall them back for recycling, through program such as under the Extended Producer Responsibility (EPR) program (Chung & Murakami-suzuki, 2008; Favot, 2014). In principle, Indonesia has developed this kind of initiative as mentioned in the Law Number 18 of 2008 on Waste Management and Government Regulation Number 81 of 2012, on Domestic Waste and Similar Waste Management (Tristiana, Koeswahyono, & Fadli, 2018). However, the implementation of the EPR scheme is not a simple task as it needs huge effort, and collaboration between government agencies, producers and the society (Chacón, Friend, Kordesch, & Reinhardt, 2010; Hanafi, Kristina, Jobiliong, Christiani, & Halim, 2011; OECD, 2001).

In the case of e-waste, Indonesia has developed Government Regulation Number 101 of 2014 on Management of Hazardous Wastes and Toxic. However, this regulation needs further national implementation regulation, as imported electronic goods are impossible to stop. This means potential electronic waste will be growing continuously. To this end, active collaboration from all stakeholders of the state is needed, as a message of the preamble of the Resolution adopted by the General Assembly on September 25, 2015 (United Nations, 2015).

Other than the local production, there are many electronic products that are coming from abroad (Wahyono, 2013). Customs administration is one of stakeholders handling import and export products. Therefore, the function and role of this agency can be maximized by applying one of their procedures, namely the Temporary Admission or Temporary Import Procedure. This is not a new procedure, as it has already been applied in many Members of the World Customs Organization (WCO) used for any specific purposes. The idea of promoting one of the customs procedures can be a good initiative for other possible contributions of customs administration to the environment program. However, in the limited literature of temporary import policy, this paper probably the first attempt to promote this policy as another contribution of Customs administration to the environmental issues by applying it into electronic products. In the differences between the temporary import policy and the general imports currently in used can be understood based on the description below.

1.1 General Import Procedure

Importation under the general import procedure starts with a transaction between the exporter and an importer which is initiated by signing a contract. When the goods arrive at the importing country, the importer will pay the full customs duty and taxes to the bank, and prepare a customs declaration based on the self-assessment principle. Furthermore, all related documents submitted to the customs office for validity checking. A customs officer may or may not conduct physical investigations on the goods. Once all documents and information are confirmed to be valid, goods will be released with customs approval, from the customs area to be distributed to consumers.

Consumers will use those products for a certain period until achieving EoL or no longer used due to several reasons. Even though each electronic product will reach their own EoL in different periods, all products finally end up in one place, a landfill. Starting this stage, the problem will arise because of the absence of facilities to process further adequately and environmental friendly.

In the absence of proper recycling factory, the e-wastes will be staying in the landfill and have and may contaminate the environment due to some hazardous contents (Perkins, Brune Drisse, Nxele, & Sly, 2014; Orlins & Guan, 2015; Yoshida et al., 2016).

1.2 Temporary Import Procedure

The temporary import is not a new procedure as it has already been applied by most of the member states of the WCO, with the WCO as the initiator. The main instrument of application is the Istanbul Convention on Temporary Admission, which is also regulated in the Revised Kyoto Convention (World Customs Organization, 1999).

This procedure is understood as the Customs procedure under which certain goods (including means of transport), can be brought into a customs territory conditionally and be relieved from payment of import duties and taxes and without application of import prohibitions or restrictions of economic character, such goods (including means of transport) must be imported for a specific purpose and must be intended for re-exportation within a specified period and without having undergone any change except normal depreciation due to the use made by them (World Customs Organization, 1990).

The key point of this procedure is that all the imported goods will be sent back to exporting countries after being used within a certain period, because the ownership still belongs to the supplier or the exporter. This is not a selling-buying transaction but leasing. To this end, sending back is mandatory, and there will be no more used electronic products remaining in the importing country (developing country).

However, in the limited literature of the temporary import policy, this paper probably the first attempt to promote the temporary admission as another contribution of the customs administration to the environmental issues by applying it into electronic product.

In the case of Indonesia, the temporary admission procedure has been regulated in the Finance Minister Decree No. 178/PMK.04/2017 and electronic products may be included under the partial relief provision. The longest period of use is 3 years. Since the exemption on duty is partial, the importers shall pay the rest e.g., 2% per month (Ministry of Finance Republic of Indonesia, 2017).

From the explanations provided, we can learn that the temporary import and general import systems are distinguished mainly based on the ownership system. The general import is a final transaction and the ownership of imported goods is shifted from the exporter to the importer, whereas there is no final change in ownership of goods under the temporary import policy. The other difference is that the duty is under temporary import.

2. Methods

The first step of the methodology is to describe the data source, generated from the 2010 Indonesian input-output (IO) table developed by the Central Bureau Statistic ([Statistic Bureau Center, 2015](#)). This is the last version of the IO table issued by this agency and has establish a transmission of table, including: annual supply and use tables, five-yearly symmetric input-output tables, five-yearly use tables at basic prices, and five-yearly valuation tables. Therefore, this 2010 IO table is still relevant to be used as a main data for IO analysis today. The other reason, as the last version, this table is valid from the date of publication, 2015 ([Statistic Bureau Center, 2015](#)).

The IO analysis is a theoretical framework and an applied economic tool in a market economy developed by Wassily Leontief with the construction of IO table published in 1936. The table shows interrelationship between economic sectors. It means, once a sector change in input side we can calculate the changes in other sectors due to the existence of fixed-coefficient linear production function that can be a main element ([United Nations, 1999](#); [Suahasil, 2005](#)). To this end, the employing of this tool will be the suitable option.

The second step is generating the industrial sectors of Indonesia based on the 2010 IO table, the most upgraded IO table issued by the Central Bureau Statistic of Indonesia in December 2015. This table is consisted of 185 x 185 economic sectors aggregated into 17 classifications, namely: 1) Agriculture, forestry, and fishing; 2) Mining and quarrying; 3) Manufacturing; 4) Electricity and gas; 5) Water supply, sewerage, waste management, and recycling; 6) Construction; 7) Wholesale and retail trade, repair of motor vehicles and motorcycles; 8) Transportation and storage; 9) Accommodation and food service activities; 10) Information and communication; 11) Financial and insurance activities; 12) Real estate activities; 13) Services company; 14) Business activities Public administration and defence, compulsory social security; 15) Education; 16) Human health and social work activities; 17) Other services activities.

Assessing the impact of the temporary import procedure to industrial activities requires a comprehensive understanding of the prevailing situation. International trade has a close relationship with economic growth ([Abdullahi, Safiyanu, & Soja, 2016](#)). Shifting from the general import to the temporary import procedure would influence some related industrial sectors, due to the changes on the rate of import duty from normal rate into partial exemption rate. The most potential influenced sectors, at least including: a) Electronic and Communication products and equipment; b) Waste management and recycling; c) Transportation and Storage facilities; and d) Leasing and business support services. To this end, this paper will only analyze limited to those affected sectors, and the rest sectors will be aggregated. The modified classification is shown in the Table 1.

Table 1. Modified classification in the IO table

Original Sector Code	Decided Code	Sectors' Name	Remarks
121	121	Electronic and communication products and equipment	Selected sector
148	148	Waste management and recycling	Selected sector
157-163	008	Transportation and storage facilities	Selected sector
176	176	Leasing and business support Services	Selected sector
	190	Rest of sectors	

The third step is calculating the new import duty based on the temporary import procedure as regulated in the Finance Minister Regulation Number 178/PMK.04/2017, e.g. 2% of normal import duty for each month of import period (in this paper is 36 months as a maximum period or 72% of normal import duty). Initial import duty is included in column 4010, imported goods (Statistic Bureau Center, 2015).

The formula of calculating new import duty based on the temporary import procedure is below:

$$ID_{(pr)} = 2\% \times ID \times P \quad (1)$$

Related to the equation, $ID_{(pr)}$, ID , and P are the Import Duty partial relief under temporary import procedure (new import duty), the Import Duty under general procedure, and the import period in months, respectively. As mentioned before, the import duty under general procedure (initial import duty) is using the amount at column 4010 (total imported products) because the pure import duty in 2010 IO table was not provided on. The maximum period for temporary import is 3 years or 36 months.

The last step is calculating the impacts of new import duty into the final demand of the selected sector of industry (see Table 1). The scenario of this step started with modifying the amount of total import in column 4010 based on the calculation in step three. New import duties that resulted from equation (1) will cause changing in total demand in column 3100, while also causing changes to total intermediate demand in column 1800 (Statistic Bureau Center, 2015).

The scenario of the paper can be seen in the Table 2 below.

Table 2. Scenario of final demand used

	Selected Sector of Industry	Total Intermediate Demand	Total Demand	Total Import	Total Supply
		1800	3100	4010	8000
Selected Sector of Industry			←	Decrease 28% →	

This scenario will employ equations of the IO analyses, including the Leontif Matrix that can predict the new of final demand (United Nations, 1999; Suahasil, 2005; Zuhdi, 2017). The equations of the scenario are as followed:

The basic equation of input-output analyzes is:

$$X_i = z_{i1} + z_{i2} + \dots + z_{in} + Y_i \quad (2)$$

Related to the equation, X_i , z_{ij} , and Y_i are the total output of sector i , value of input i for output j , and final demand from sector i , respectively. This equation shows distribution from output sector i to other production sectors, and then allocated to final user (household, company, government, abroad) (Robinson, 2005; Suahasil, 2005). Since the sectors of industry are more than 1, the whole equation would be:

$$\begin{bmatrix} X_1 = z_{11} + z_{12} + z_{13} \dots + z_{1n} + Y_1 \\ X_2 = z_{21} + z_{22} + z_{23} \dots + z_{2n} + Y_2 \\ \dots \\ X_n = z_{n1} + z_{n2} + z_{n3} \dots + z_{nn} + Y_n \end{bmatrix} \quad (3)$$

The first step of input-output analyses is developing the input-output coefficient as the minimum input needed to produce 1 unit output from certain sector. The coefficient can be calculated as followed:

$$a_{ij} = \frac{z_{ij}}{X_j} \text{ or } z_{ij} = a_{ij} \cdot X_j \quad (4)$$

a_{ij} = coefficient input i for output j

After obtaining the input-output coefficient, the equation 2 can be modified as followed:

$$\begin{bmatrix} X_1 - a_{11}X_1 - a_{12}X_2 - \dots - a_{1n}X_n = Y_1 \\ X_2 - a_{21}X_1 - a_{22}X_2 - \dots - a_{2n}X_n = Y_2 \\ \dots \\ X_n - a_{n1}X_1 - a_{n2}X_2 - \dots - a_{nn}X_n = Y_n \end{bmatrix} \quad (5)$$

By collecting the element X , those elements can be written in matrix equation:

$$X = (I - A)^{-1} Y \quad (6)$$

The $(I - A)^{-1}$ matrix known as Leontif Inverse Matrix, and the elements A (a_{ij}) can describe effect of changes in final demand into sectors in the economy. The flow of goods and services can be analyzed by using the input-output analysis. Hence, this tool has a special benefit instead of using algebraic formula (Stilwell & Minnitt, 2000). Furthermore, in calculating the impact of reducing import duty on electronic products due to the shifting procedure from the general import to the temporary import policy can use this matrix as the coefficient.

3. Results and Discussion

Input-output table of Indonesia has been arranged based on 185 sectors aggregated into 17 sectors classification, adopted from the Supply and Used Table (SUT) as recommended by international best practices in developing an input-output table (Statistic Bureau Center, 2015).

Table 3. Modification of the original IO table of 2010 for targeted sectors*

SECTORS	121	148	008	176	190	1800	3090	3100
121	39,315,959	233	983,632	273,688	77,479,278	118,052,790	275,957,446	394,010,236
148	5,929	-	2,424	8,275	388,635	405,263	6,564,262	6,969,525
008	598,959	1,491	30,032,078	2,943,665	102,393,877	135,970,070	232,712,578	368,682,648
176	773,711	2,169	13,289,645	855,471	68,897,466	83,818,462	21,960,337	105,778,799
190	62,048,207	143,378	263,001,438	34,025,914	5,727,975,243	6,087,194,180	7,864,658,186	13,951,852,366
1900	102,742,765	147,271	307,309,217	38,107,013	5,977,134,499	6,425,440,765	8,401,852,809	14,827,293,574
2010	14,395,257	79,812	86,111,622	24,649,649	2,044,839,866	2,170,076,206		
2020	20,151,125	315	155,579,871	38,751,292	4,241,616,490	4,456,099,093		
2030	374,736	585	1,887,125	505,323	54,736,649	57,504,418		
2090	34,921,118	80,712	243,578,618	63,906,264	6,341,193,005	6,683,679,717		
2100	137,663,883	227,983	550,887,835	102,013,277	12,318,327,504	13,109,120,482		

SECTORS	4010	4020	4090	5090	6090	7000	8000
121	156,050,996	1,793,555	157,844,551	82,529,778	15,972,024	137,663,883	394,010,236
148	6,116,164	-	6,116,164	-	625,378	227,983	6,969,525
008	494	92,068,366	30,568,878	(211,660,026)	(1,114,039)	550,887,835	368,682,648
176	-	3,432,450	3,432,450	-	333,072	102,013,277	105,778,799
190	1,184,964,457	159,736,837	1,339,757,731	129,130,248	164,636,883	12,318,327,504	13,951,852,366
1900	1,280,688,566	257,031,208	1,537,719,774	-	180,453,318	13,109,120,482	14,827,293,574

*Final demand side

1800 = Total intermediate output

1900 = Total intermediate input

2010 = Labor compensation of employees

2020 = Gross operating surplus and mixed income

2030 = Taxes less subsidies on production

2090 = Value added at basic prices

2100 = Total domestic input at basic prices

3090 = Total final demand

3100 = Total demand based on purchasing price

Supply side

4010 = Import of Goods

4020 = Services on import

4090 = Total import

5090 = Total margin of trading and transportation

6090 = Taxes less subsidies and products

7000 = Total output domestic on basic price

8000 = Total supply based on purchasing price

As mentioned before, the Table 3 is restructured based on the Indonesian IO Table of 2010 by separating the targeted sectors and collecting the untargeted into the rest of sectors (code number 190). The targeted sectors are settled as the 4 x 4 matrices (column and row of sectors: 121, 148, 008, and 176). The amount of the final supply (8000) is equal to the Final demand (3100) (Statistic Bureau Center, 2015). By applying the temporary import procedure the partial relief import duty of goods will be as 4010_{t+1} (see Table 4).

Table 4. The partial relief of import duty

SECTORS	121, 148, 008, 176, 190	1800	3090	3100	4010 _(t)	4010 _{(t)+1}
121	(see table 3)	118,052,790	275,957,446	394,010,236	156,050,996	43,694,278.88
148		405,263	6,564,262	6,969,525	6,116,164	1,712,525.92
008		135,970,070	232,712,578	368,682,648	494	138.32
176		83,818,462	21,960,337	105,778,799	-	-
190		6,087,194,180	7,864,658,186	13,951,852,366	1,184,964,457	331,790,047.96
1900		6,425,440,765	8,401,852,809	14,827,293,574	1,280,688,566	358,592,798.48

Table 4 shows the calculation result of the partial exemption of import duty by using the formula (1). The total amount in column 4010_{(t)+1} is decreasing from IDR 1,280,688,566 million to IDR 358,592,798.48 million due to the changing rate percentage being imposed from 100% to 28%. This means that the implementation of the proposed procedure has resulted in potential loss of the import duty side about ID 992,095,768 million.

Under electronic and communication product and equipment (column 121), the potential loss is the IDR 112,356,717 million, which is maybe the highest potential loss among others, while under other selected sectors are smaller than the electronic and communication product and equipment sector potential loss. The rest of sectors look have big difference because this sector is covering many sectors (see row number 190).

Table 5. The coefficient input-output

SECTORS	121	148	008	176	190
121	0.2856	0.0010	0.0018	0.0027	0.0063
148	0.0000	-	0.0000	0.0001	0.0000
008	0.0044	0.0065	0.0545	0.0289	0.0083
176	0.0056	0.0095	0.0241	0.0084	0.0056
190	0.4507	0.6289	0.4774	0.3335	0.4650

Having arranged the new IO table, the next step is finding out the input-output coefficient based on the equation (4). This can be understood as the number of inputs used to produce one sector output unit (Suahasil, 2005). The table shows that to produce IDR 1 value of sector 121 needs 0.2856 input from sector 121, 0.0044 from sector 008, 0.0056, and 0.4507 from sector 190. The similar interpretation can be developed to the other sectors. This matrix is very important as the only sources for establishing the Leontif matrix as an output multiplier to calculate the predicted output of each targeted sectors.

Table 6. The Leontif Matrix based on the coefficient input-output

SECTORS	121	148	008	176	190
121	1.4106	0.0122	0.0114	0.0098	0.0169
148	0.0000	1.0000	0.0000	0.0001	0.0001
008	0.0176	0.0182	1.0673	0.0369	0.0172
176	0.0153	0.0169	0.0316	1.0132	0.0113
190	1.2136	1.2126	0.9818	0.6730	1.9058

By utilizing the equation (6) the Leontif matrix can be calculated, and the result is in the Table 6. This matrix can be used as an output multiplier to predict total final supply (8000) or final demand (3100).

Table 7. The new final supply (8000_{t+1}) or final demand (3100_{t+1})

SECTORS	121	148	008	176	190	Y_{t+1}	New Final Supply	Current Supply
121	1.4106	0.0122	0.0114	0.0098	0.0169	281,653,519	624,254,390.74	394,010,236
148	0.0000	1.0000	0.0000	0.0001	0.0001	2,565,887	3,405,376.80	6,969,525
008	0.0176	0.0182	1.0673	0.0369	0.0172	430,182,274	693,124,914.46	368,682,648
176	0.0153	0.0169	0.0316	1.0132	0.0113	105,778,799	272,690,633.47	105,778,799
190	1.2136	1.2126	0.9818	0.6730	1.9058	13,103,621,520	25,811,012,636.67	13,951,852,366

Finally, the calculation of new final supply of each selected sector can be seen in the Table 7, by multiplying the Leontif matrix with the final demand, by using the equation (6).

A little bit questionable under sector 148 (Waste management and recycling) decreases from IDR 6,969,525 to 3,402,308 million. Normally, the more a country import products they will need more cost of waste management and recycling. However, this issue can be analyzed further under new research by consulting the Statistic Central Bureau on how the developed the IO table.

- a. Electronic and Communications Products and Equipment Sector (121). This sector shows the potential for increasing total output to be produced from IDR 394,010,236 to IDR 508,083,550. This happens because of the effort of sectors to fulfill the final demand for the products. The other reason, because of lower import duty rate could invite importer to import more than before. Based on that amount, as mentioned before that the more electronic products enter to Indonesia, the more volume e-waste will be. To this end, this increase in total output would also have the potential to raise the volume of waste in landfills because Indonesia has not proper recycling factory in place for the time being. However, since the implementation of the temporary import procedure will be mandating the importer to ship back the goods to the exporting country, then landfills will be saved. In this case, the strategy of implementing the temporary import procedure on the electronic products looks will help resolve the current problem.
- b. Waste management and recycle (148). This is quite interesting the result under the sector 148 (Waste management and recycling) which is decreasing from IDR 6,969,525 to 3,402,308 million. Logically, the more a country import products they will need more cost of waste management and recycling. However, this issue can be analyzed further under new research by consulting the Statistic Central Bureau on how the IO table being developed.
- c. Transportation and warehousing (008). Since the output of sector 121 is increasing, this sector will automatically be busier. The output of this sector is getting higher from IDR 368,682,648 to IDR 915,358,315 million. This amount is only for incoming goods because this paper is being developed by analyzing the IO table of Indonesia. As the paper is talking about re-exporting the used imported products while the calculation is limited to the input-output table of Indonesia, then the output in this sector maybe double because of the re-exporting activities.
- d. Leasing and Business Support Services (176). This sector shows the higher potential output from IDR 105,778,799 to IDR 276,657,752 million. This is a good indication that future business may influence other sectors such as tax and labor. However, this information is only applied to the domestic situation in Indonesia. As we may be aware, the temporary import procedure will also boost the leasing and business support services

in the exporting country, because of the goods ownership mechanism. Since the temporary import procedure is regulating import and re-export mechanism, analyzing the inter-regional input-output table may provide more clear impact of this policy.

4. Conclusion

As a new initiative, the idea of promoting the use of the temporary import procedure on electronic products will support environmentally sustainable programs by sending back imported goods to the exporting country, which is typically to a producer who has the knowledge of recycling used products before becoming waste. In the line of this, discussion with producer is important on how to take action into the idea.

Even though state revenue from import duty will potentially decrease, the input-output analyses shows that this idea will also promote some opportunities to increase other benefit from product supply chain, transportation and warehousing, leasing and rental services, and other business. The government will also gain some benefits from the tax perspective, hence impacts of the revenue. Since the temporary import procedure is under customs control, this agency could do a more comprehensive study to promote this policy to be more environmental friendly.

Import and export transaction will involve at least 2 countries, e.g. importing country and exporting country. Since the idea of the temporary import procedure is sending back the used products to the exporting country, then the more comprehensive exhibit of the impact of the temporary import procedure to all involved parties can be seen by analyzing the inter-regional input-output table. The other thing that should be done further is the feasibility study as the consequences of the proposed procedure.

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References

- Abdullahi, A. O., Safiyanu, S. S., & Soja, T. (2016). [International Trade And Economic Growth : An Empirical Analysis of West Africa](#), 7(2), 12–15. <https://doi.org/10.9790/5933-07211215>
- Araceli, D. Q., & Dios, Q. (2015). [The Reuse of Waste Electrical and Electronic Equipment \(WEEE\). A Bibliometric Analysis](#). *International Journal of Waste Resources*, 05(02). <https://doi.org/10.4172/2252-5211.1000177>
- ASEAN Network. (2009). E-waste in Indonesia.
- Bo, B., & Yamamoto, K. (2010). [Characteristics of E-waste Recycling Systems in Japan and China](#). *World Academy of Science, Engineering and Technology, International Journal of Environmental, Chemical, Ecological, Geological and Geophysical Engineering*, 4(2), 89–95. Retrieved from <https://waset.org/Publication/characteristics-of-e-waste-recycling-systems-in-japan-and-china/10336>
- Chacón, L., Friend, G., Kordesch, N., & Reinhardt, S. (2010). [Product Stewardship & Extended Producer Responsibility Towards a Comprehensive Packaging Recycling Strategy for the US](#). *October*, 1–69.

- Chi, X., Streicher-Porte, M., Wang, M. Y. L., & Reuter, M. A. (2011). [Informal electronic waste recycling: A sector review with special focus on China](#). *Waste Management*, 31(4), 731–742. <https://doi.org/10.1016/j.wasman.2010.11.006>
- Chung, S., & Murakami-suzuki, R. (2008). [A comparative study of e-waste recycling systems in Japan, South Korea and Taiwan from the EPR perspective: implications for developing countries](#). *Kojima. Chiba*, 21. <https://doi.org/10.1016/j.fct.2011.11.004>
- Favot, M. (2014). [Extended producer responsibility and E-waste management: Do institutions matter?](#) *Economics and Policy of Energy and the Environment*, (1), 123–144. <https://doi.org/10.3280/EFE2014-001006>
- Fu, J., Zhou, Q., Liu, J., Liu, W., Wang, T., Zhang, Q., & Jiang, G. (2007). [High levels of heavy metals in rice \(Oryza sativa L.\) from a typical E-waste recycling area in southeast China and its potential risk to human health](#). *Chemosphere*, 71(7), 1269–1275. <https://doi.org/10.1016/j.chemosphere.2007.11.065>
- Grant, K., Goldizen, F. C., Sly, P. D., Brune, M., Neira, M., Berg, M. Van Den, & Norman, R. E. (2013). [Health consequences of exposure to e-waste : a systematic review](#). *The Lancet Global Health*, 1(6), e350–e361. [https://doi.org/10.1016/S2214-109X\(13\)70101-3](https://doi.org/10.1016/S2214-109X(13)70101-3)
- Gupta, S., Modi, G., & Saini, R. (2014). [A review on various electronic waste recycling techniques and hazards due to its improper handling](#). *International Refereed Journal of Engineering and Science (IRJES) ISSN (Online)*, 3(5), 2319–183. <http://www.irjes.com/Papers/vol3-issue5/B350517.pdf>
- Hanafi, J., Kristina, H. J., Jobiliong, E., Christiani, A., & Halim, A. V. (2011). [The Prospects of Managing WEEE in Indonesia](#), (39). https://link.springer.com/chapter/10.1007/978-3-642-19692-8_85
- Kiddee, P., Naidu, R., & Wong, M. H. (2013). [Electronic waste management approaches : An overview](#). *Waste Management*, 33(5), 1237–1250. <https://doi.org/10.1016/j.wasman.2013.01.006>
- Kojima, M., Yoshida, A., & Sasaki, S. (2009). [Difficulties in applying extended producer responsibility policies in developing countries: Case studies in e-waste recycling in China and Thailand](#). *Journal of Material Cycles and Waste Management*, 11(3), 263–269. <https://doi.org/10.1007/s10163-009-0240-x>
- Ministry of Finance Republic of Indonesia. Peraturan Menteri Keuangan No. 178/PMK.04/2017 Tentang Impor Sementara, Pub. L. No. 178/PMK.04/2017 (2017). Indonesia: Indonesian Customs Depository.
- OECD. (2001). [Extended Producer Responsibility A GUIDANCE MANUAL FOR GOVERNMENTS](#). *Oecd*. Paris: OECD of Publication Service. https://www.oecd-ilibrary.org/environment/extended-producer-responsibility_9789264189867-en
- Orlins, S., & Guan, D. (2015). [China's toxic informal e-waste recycling: Local approaches to a global environmental problem](#). *Journal of Cleaner Production*, 114(2016), 71–80. <https://doi.org/10.1016/j.jclepro.2015.05.090>
- Perkins, D. N., Brune Drisse, M. N., Nxele, T., & Sly, P. D. (2014). [E-waste: A global hazard](#). *Annals of Global Health*, 80(4), 286–295. <https://doi.org/10.1016/j.aogh.2014.10.001>
- Robinson, T. (2005). [An Analysis of the Output and Employment Conversion Matrices of Australia's Economy](#), 2(2).

- <https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1409&context=commpapers>
- Siringoringo, H. (2013). [Consumption Model of Imported Products: Indonesian Case](#). *Procedia - Social and Behavioral Sciences*, 81, 195–199. <https://doi.org/10.1016/j.sbspro.2013.06.412>
- Siringoringo, H., Sri, E., Kowanda, A., & Saptariani, T. (2013). [Shopping Behavior of Indonesian Consumer Towards Imported Products](#). *Procedia - Social and Behavioral Sciences*, 81, 411–415. <https://doi.org/10.1016/j.sbspro.2013.06.452>
- Statistic Bureau Center. (2015). [Tabel Input Output Indonesia 2010](#). Jakarta, Indonesia: Statistic Bureau Center, Indonesia. Retrieved from <https://www.bps.go.id/>
- Stilwell, L. C., & Minnitt, R. C. A. (2000). [Input-output analysis: Its potential application to the mining industry](#). *The Journal of the South African Institute of Mining and Metallurgy*, (December), 455–460. <https://doi.org/10.1016/j.pec.2015.02.007>
- Suahasil, N. (2005). *Analisis Input Output (Input Output Analysis)*. (Rahardja Prathama, Ed.) (2nd ed.). Jakarta, Indonesia: Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia.
- Tang, X., Shen, C., Shi, D., Cheema, S. A., Khan, M. I., Zhang, C., & Chen, Y. (2009). [Heavy metal and persistent organic compound contamination in soil from Wenling: An emerging e-waste recycling city in Taizhou area, China](#). *Journal of Hazardous Materials*, 173(1–3), 653–660. <https://doi.org/10.1016/j.jhazmat.2009.08.134>
- Tristiana, E., Koeswahyono, I., & Fadli, M. (2018). [Managing Policy of Extended Producer Responsibility \(EPR\) Implementation to Reduce Plastic Waste in Indonesia](#), 7(07), 25–32. [http://www.ijhssi.org/papers/vol7\(7\)/Version-2/E0707022532.pdf](http://www.ijhssi.org/papers/vol7(7)/Version-2/E0707022532.pdf)
- United Nations. (1999). *Handbook of Input-Output Table Compilation and Analysis*. New York: United Nation Publication.
- United Nations. (2015). [Transforming our world: the 2030 Agenda for Sustainable Development](#). *General Assembly 70 Session, 16301*(October), 1–35. <https://doi.org/10.1007/s13398-014-0173-7.2>
- Wahyono, S. (2013). [Kebijakan Pengelolaan Limbah Elektronik Dalam Lingkup Global dan Lokal \(Global and Local Electronic Waste Management Policy\)](#). *Jurnal Teknik Lingkungan*, 14(1), 17–24. <http://ejurnal.bppt.go.id/index.php/JTL/article/view/1437>
- WCO. (2012). [Annual Report 2011-2012](#).
- World Customs Organization. (1990). [Istanbul Convention on Temporary Admission](#). Brussels. Retrieved from http://www.wcoomd.org/-/media/wco/public/global/pdf/about-us/legal-instruments/conventions-and-agreements/istanbul/istanbul_legal_text_eng.pdf
- World Customs Organization. [The Revised Kyoto Convention \(1999\)](#). Belgium. Retrieved from <http://www.wcoomd.org/en>
- Yoshida, A., Terazono, A., Ballesteros, F. C., Nguyen, D. Q., Sukandar, S., Kojima, M., & Sakata, S. (2016). [E-waste recycling processes in Indonesia, the Philippines, and Vietnam: A case study of cathode ray tube TVs and monitors](#). *Resources, Conservation and Recycling*, 106, 48–58. <https://doi.org/10.1016/j.resconrec.2015.10.020>
- Zuhdi, U. (2017). [The dynamics of total outputs of Indonesian industrial sectors: A further study](#). *Journal of Physics: Conference Series*. <https://doi.org/10.1088/1742-6596/820/1/012031>