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LIMITING FACTORY WASTE BY IMPOSING A PIGOUVIAN TAX

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Abstract

Environmental pollution due to forest fires has often occurred and this is very disturbing to ecosystems as well as the health of living things. the government is expected to reduce the level of environmental pollution through the implementation of the Pigouvian tax. This study aims to describe what the Pigouvian tax is and how it is imposed. This research uses a descriptive-analytic method with a qualitative approach. The population in this study were managers in all textile companies in Bandung (336 companies). The sample of this study was taken randomly from company managers. Concerning the introduction of environmental taxes although many countries have introduced green taxes in principle some people are in favour of the collection mechanism while others are not. The government should set higher environmental standards to maintain current levels of public spending as part of green tax reforms.

Keywords: Green tax, Pigouvian tax, Pollution, Waste.

1. Introduction

Natural resources and the environment play an important role in economic development, especially in developing countries like Indonesia. Natural resources, in addition to providing goods and services, are also the backbone of economic growth and a source of income for the community as well as being an important national asset. Therefore, the availability and sustainability of these natural resources are very important for the continuation of economic development, and it depends on good management by each stakeholder, namely the community and the government [1, 2].

Many environmental problems have resulted in endangered native Indonesian flora and fauna (see Fig. 1). According to the IUCN Redlist records, In Indonesia, 76 species of animals and 127 species of plants are in high threat status. 205 species of animals and 88 species of plants are in the endangered and critical category. 557 species of animals and 256 species of plants are vulnerable.

Fig. 1. Fire in the forest in Indonesia.

The area of burned land in all regions of Indonesia reached 857 thousand hectares (ha) which were identified from January to September 2019. Forest and land fires (Karhutla) occur. They are not only in peatlands but also in mining areas. Forest becomes an important issue since it helps converting pollution air into clean air [3-5]. According to the Ministry of Environment and Forests (KLHK), peat burning has reached 227000 ha. The forest and land fires are mainly in the peatlands of Central Kalimantan covering 76000 ha and in the mining area of East Nusa Tenggara which covers 119000 ha. On mineral lands, Karhutla occurred in all provinces of Indonesia with the smallest affected area being Banten province with 9 ha.

KLHK data documented forest and surface fire areas covering an area of 857,756 ha from January to September 2019 detailing 63,0451 ha of deposits and 227,304 ha of peat. Below are the areas of soil affected by minerals and peat in some states where carfutra occurs each year. The area of burnt land in Central Kalimantan is 134,227 ha, West Kalimantan is 127,462 ha, South Kalimantan is 113,454 ha, and Riau is 75,871 ha. The total area of South Sumatra is 69,000 km^2. In general, the area is greater than 510,000 ha in 2018, 438,000 ha in 2016, and now it is getting lesser.

National Board for Disaster Management (BNPB; known as Badan Nasional Penanggulangan Bencana in Indonesia) data at 08.00 WIB on 22 October 2019 reported that forest and land fires are still occurring in many parts of Indonesia. Hotspots or hotspots have been identified in six provinces where BNPB is a concern namely South Sumatra 153 spots Central Kalimantan 44 South Kalimantan 23 West Kalimantan 5 and Jambi 2. The MODS-Catalogue data is based on eight satellite images. The presence of hot spots in the last 24 hours is still affecting the air quality in the affected areas. Quality data measured with PM 2.5 parameters range from good to unhealthy. Indeed, this analysis of PM is important [6]. Here are the details of air quality as measured by PM 2.5 in six regions: Unhealthy South Sumatra (136) Unhealthy Jambi (102) Unhealthy Central Kalimantan (101) Unhealthy South Kalimantan (60) Central Riau (27). Despite the hotspots, only West Kalimantan's air quality shows the good status (5). Apart from these six provinces, fires are also still occurring in mountainous areas such as Mount Cikuray, Ungaran and Arjuno-Welirang, and Ringgit.

Solving environmental problems must be holistic and cross-disciplinary, including through an economic approach. Many researchers have discussed the way how to solve environmental issues in many disciplines and subjects of research [7-11]. Various groups have begun to offer ideas related to protecting the environment one of which is the practice of environmental accounting. The environmental approach known as the green accounting concept began to develop in Europe in the 1970s and research on green accounting issues began to develop in the 1980s [12].

In developed countries such as Europe and Japan attention to environmental issues is growing rapidly both theoretically and in practice. This is evident from the many rules of this environment. Environmental accounting practices have not worked well in Indonesia to date. The rapid level of development in each of these autonomous countries may or may not understand aspects of the environment and may ultimately be the main cause of environmental problems.

To avoid undue scrutiny of natural resources and the environment the Organization for Economic Co-operation and Development (OECD) introduced its first principle in 1972 Polluting Countries (PPM). This principle tries to neutralize the weaknesses of this mechanism. Market resulting in the market's failure to accommodate external costs or environmental costs.

The polluter must pay principle offers two interpretations:

a) According to this principle, the polluter must bear the costs incurred due to pollution in such a way that the waste disposed of is following the specified quality standards. This means that PPM gives a right to dispose of waste into the environment up to a certain amount free of levies. Such an interpretation is a basic and narrow interpretation.

b) The development of the PPM interpretation, namely that polluters are no longer allowed to dispose of waste to a certain extent without payment, but they are required to pay in addition to control costs as well as environmental damage costs. This interpretation calls for a tax or levy as an incentive, namely requiring polluters to pay the permissible net value of discharged waste. This can motivate polluters to reduce the volume of pollution. That is why tax is well-informed from the beginning of education level [13].

In implementing the environmental tax, some groups agree with the enactment of the principle mechanism, but some do not agree with the principle, even though many countries have now implemented green tax. Based on the European Environment Agency, in 2003 the contribution of green tax to total tax revenues in several countries showed a calculated value, including Canada (3.99%), Denmark (10.27), France (4.91%), Germany (7.44%), Japan (6.58%), Netherlands (8.93%), Norway (6.86%), Sweden (5.84%), UK (7.57%) and US (3.46%).

The existence of a green tax is very vital, without this tax the government will experience difficulties in carrying out environmental policies for the prevention, control, and control of pollution and or its destruction. Professor A.C. Pigou was the first to propose that a tax be imposed on environmental pollution and that the tax should be paid by the person or institution that causes the pollution. the tax system is referred to as "Pigouvian Taxes". to understand it, consider Fig. 2.

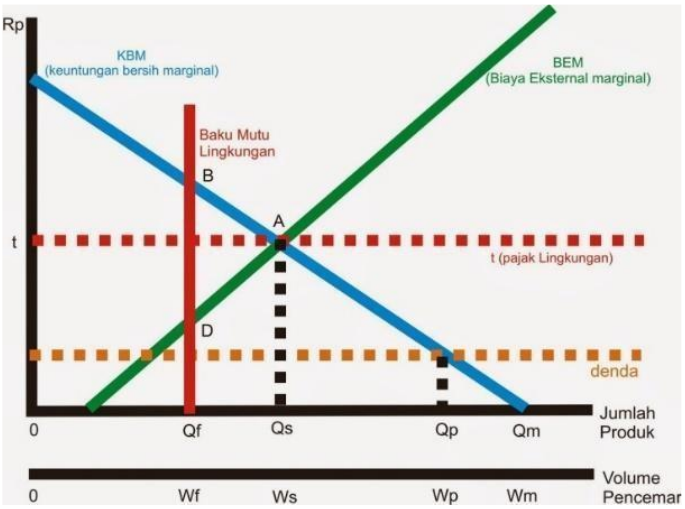

Fig. 2. Pigouvian taxes principle.

Figure 2 shows that production must be reduced to the point of optimal net social benefits, namely at the amount of Qs production, namely when the tax imposed is the same as the cost of damage caused by the pollution produced by the company or factory (BEM). Pigouvian tax is indicated by the dotted line t, that is, for each unit of pollution, the entrepreneur must pay tax to the government as high as t. A producer will get the maximum net profit by producing goods or products up to point Qm. However, if the cost of environmental damage due to pollution must be considered by producers, then production will not be carried out if the marginal net profit is lower than the marginal external cost. Therefore, production will stop at point Qs and consequently reduce pollution from a volume of Wm to Ws. This pollution tax provides greater benefits than a direct regulatory system that carries fines for non-compliance with quality standards or pollution standards.

The Pigouvian tax levy system has several advantages compared to environmental regulatory systems [14]. However, the Pigovian line is very difficult to use in practice for several fundamental reasons such as uncertainty about the cost of environmental damage caused by pollutants. Determination of BEM (marginal

external cost) is the basis for determining environmental taxes which requires clear information and data relating to the following factors:

(i) Knowledge of the types and quantities of products (output) produced by a company

(ii) The amount (dose) of pollutant produced by the company as an unwanted by-product,

(iii) The nature of the accumulation of pollutants in the long term,

(iv) Is the pollutant exposed directly and continuously to humans (human exposure)?

(v) The damage caused by the pollutant,

(vi) Assessment in rupiah of the cost of damage due to pollution.

From the description above, it appears that the calculation of the appropriate amount of environmental tax is mandatory. For example, the air pollution caused by carbon dioxide in the 20s in 2020 is not the same as the normal 20s in the 20s because of the high tax imposed by coal. For this reason, it is necessary to carry out further research on how to develop a green accounting model for corporates through environmental accounting reports and Pigouvian tax.

The aims and objectives of this study are to develop a green accounting model for corporates by finding the right tax base for the Pigouvian tax, thereby fulfilling the element of fairness in taxes and making it easier for the government to determine the amount of tax owed on pollution made by corporates so that environmental sustainability is maintained. life.

The green accounting model for corporations has been extensively researched by previous researchers, but in this study, the researchers conducted a study on green accounting for corporations through environmental accounting reports and also included the Pigouvian tax variable which would then produce a new model that can support environmental sustainability by implementing taxes. environment.

Researchers are trying to make a breakthrough by involving experts in the field of measuring industrial waste who can provide an analysis of the acceptable threshold value for waste produced by industry so that the basic measurement of the Pigouvian tax imposition will be more precise and fairer.

2. Method

The research method used in this research is descriptive-analytical. The use of this qualitative approach is based on the concept of the natural order; Basic theory is descriptive; Its more about the process than the results; Design is temporary; And research findings are discussed and mutually agreed upon. However, bearing in mind that the main objective of this research is not only to analyse the object under study through the process of exploring facts and object data in the field as it is but also to try to carry out an analysis of a wider area by providing an assessment and prediction of long-term needs for future. Therefore, to provide flexibility in adjusting to multiple things, and to be more sensitive to policy evaluation and refinement of the values elaborated by analysis methods are used in conjunction with post-policy analysis techniques, or R terms.

The population in this study were managers in all textile companies in the Regency and City of Bandung, namely 336 companies. The sample of this study

was taken randomly from company managers. Each manager completes a questionnaire regarding their perceptions of this environmental accounting issue. Data were collected in two ways in this study. The first way is to collect secondary data such as literature reviews from various book journals and many references from the library. Another way is to collect primary data i.e. data on company management perceptions related to financial accounting and Pigouvian tax reporting. After conducting pilot testing, several questionnaire items were revised. This happens because; first, respondents may be motivated to provide arguments/statements following the company's long-term goals compared to their beliefs or current conditions. Second, the composition of the questionnaire may influence the answers given.

3. Results and Discussion

The implementation of green accounting is highly dependent on the characteristics of the company's understanding of environmental issues. An understanding of environmental issues will guide companies in developing their policies, especially regarding environmental protection. Ginsberg and Bloom [15] guide several corporate position metrics related to corporate environmental issues. The state matrix of industries related to environmental protection industrial policy is explained below. The choice of strategy is suited to the matrix situation of the company (see Fig. 3).

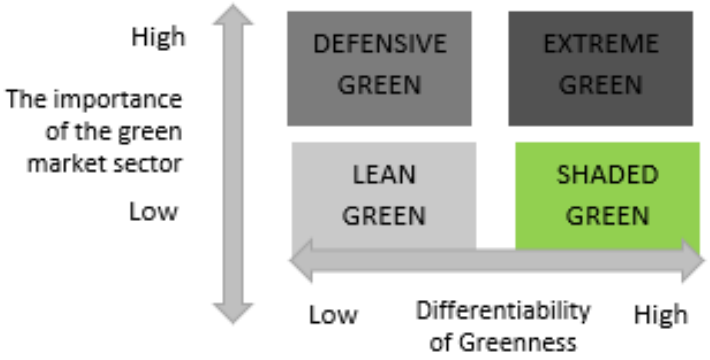

Fig. 3. Firm condition matrix [15].

Lean Green tries to be a good social part but they do not focus on releases to create environmentally friendly products/services. However, they are encouraged to reduce costs and increase efficiency through environmentally friendly activities that aim not only to protect the environment but also to create competitive advantages in terms of low-cost products. Defensive green often uses green marketing as a response to a crisis or as a defensive measure in response to a competitor's activities. They try to improve the brand image and control the losses realizing that the green industry segment is important and profitable. Shade Green invests in long-term comprehensive environmentally friendly industrial processes that require a high level of financial and non-financial commitment. Such companies see the environment as an opportunity to develop innovative products and technologies that meet needs and are produced in a process that favours profitable competition. They can differentiate themselves on these environmental

issues but choose not to because they can benefit by prioritizing issues other than environmental issues. The overall philosophy and values of Extreme Green make this kind of company. The issue of environmentally friendly products is fully integrated into the company's business and product recycling cycle processes. Often the issue of environmentally friendly products becomes the goal that drives companies from day to day. These methods include environmental management based on TQM cost methods and management of environmental issues.

From the four matrices, the company's condition is related to its attention to environmental issues. Indeed, it will also influence the pattern of management including accounting in the company. The application of green accounting will be influenced by the condition of the company. "Organizational change" explains that organizations respond to changes in their environment in various ways, and environmental accounting is one way of making these changes [16]. Choi [17] mentions in his research, companies with high industry profiles will systematically disclose more and better information than companies with lower industry profiles. Gamble et al. [18] explained that the environmental accounting disclosure model is carried out in one of the following ways;

(i) SQD--Short qualitative discussion (not in footnotes but explanations of no more than one page)
(ii) EQD--Expanded qualitative discussion (not in footnotes but explanations can be extended to one page)
(iii) FN- - Discussions in footnotes (Footnote)
(iv) JE--Journal entries recorded in accounts

Environmental accounting as well as social accounting has difficulty measuring the value of the free external costs and benefits generated by industrial processes. Air Pollution Liquid Waste Ammonia Steel Cylinder Lake It is not easy to measure the damage to the community and the ecological environment caused by the steel cylinder core lake or other external factors. According to a survey conducted in the 1990s in the United States and several countries [17], most people believed that the environmental discourse was important and that its needs and standards were not complex and that the environment was. for sustainable development. I believe it does. Indeed, improvements come at a price. The findings suggest that stakeholders pay attention to companies that are responsible for environmental issues.

There are several ways companies can communicate their concerns about these environmental issues including business publications television blogs and/or radio and annual financial statements [18]. There are currently no uniform standards for environmental disclosure projects. However, the United Nations Economic and Social Council (ECOSOC PBB) Ernst & Young, Institute of Chartered Accountants in England and Wales (ICAEW), and the Global Reporting Initiative (GRI). Firms' motivation to report on environmental issues is conditioned by the presence of voluntary capitalization of environmental issues [16, 17] or the presence of related obligations imposed by accounting standards such as FASB for finance [18], subject theory [19], legitimacy theory and political economy theory.

Some academics try to examine this discourse within the framework of positive accounting theory by looking for links between environmental indicators and financial indicators. The hypothesis they put forward: better environmental performance will positively affect the company's business (financial) performance. Related to the motivation that drives management in environmental accounting reporting, the

company's policy direction in green accounting policies may arise from management's willingness to report it without any obligation from a third party. This all happens due to market-driven, where customers in recent years have demanded the company's concern to create products/services that are friendly to the environment.

The preparation of a green accounting model for corporates through environmental awareness, environmental involvement, environmental accounting reports, and environmental audits in Indonesia has been carried out [20]. Affect, concern, involvement, financial accounting reporting, and the audit carried out descriptive statistical tests and then positioned the company in the company's matrix of environmental problems. However, the model they produce only produces environmental accounting disclosures where there is no application of sanctions for environmental pollution by companies in the form of environmental taxes.

Many other researchers have conducted studies on the implementation of this environmental tax, including Sun [21] examining how green tax affects China, where the results of his research concluded that

(i) The implementation of green tax policy depends on the joint efforts of central and local governments.
(ii) The effectiveness of green tax mainly depends on the level and source of taxes of other policies including excise tax VAT and other taxes.
(iii) The government should set higher environmental standards to maintain current levels of public spending under green tax reforms.

The environmental impact of a meat consumption tax reflects the extent of Sweden's environmental impact. Three meat products including beef, chickens, and pigs, and three pollutants that cause environmental damage; greenhouse of gases, nitrogen, and phosphorus. The results show that the touch at the same time of environmental all three meat products can be taxed to reduce greenhouse gas, nitrogen phosphorus ammonia emissions by at least 27%.

Focuses on whether long-established environmental-related taxes (ERT) are related to environmental performance in 50 Asian & South African countries, where the results show that countries with high environmental tax revenues experience an increase in reductions in CO_2 and PM10 emissions and energy consumption and production from fossil sources.

Various countries, especially the 34 countries that are members of the OECD, have implemented environmental taxes and some of them are countries with the best environmental tax systems in the world. Most of these countries have now successfully implemented environmental taxes such as taxes on carbon emissions, greenhouse gases, fuels, vehicles, and other types of environmental taxes. In addition, in recent years, non-OECD countries have also started implementing environmental taxes. However, it is different from the current conditions in Indonesia, where the 4th largest population has not yet implemented an environmental tax, especially when looking at the apprehensive environmental conditions in Indonesia in recent decades. Indonesia, with the 3rd largest forest in the world, is referred to as the lungs of the world, but over time, the destruction of forests is getting worse with the increasing development and expansion of cities, especially in the Kalimantan area. The large number of mining industries that do not return forests results in environmental damage caused by the waste they produce. In addition, the policy of subsidizing premium fuel and diesel will also

contribute to higher air pollution in the future if it is not addressed as soon as possible. The application of taxes in Indonesia is not yet oriented towards environmental protection, it is still more oriented towards increasing Local Own Revenue, in addition to the lack of the government's role in monitoring environmental protection activities and forms of tax returns that are lacking in environmental protection efforts.

4. Conclusion

Environmental tax collection should be based on three general principles. The first polluter plays the policy. This principle was first proposed by the OECD in the 1970s. The basic idea proposed is that polluters are obliged to bear the costs necessary to improve the environment. Pollution costs are calculated based on goods and/or services that cause environmental pollution during the production or consumption process. This theory is also based on the understanding that positive or negative actions in the environment must be carefully calculated. Prevention is the second rule. This initial principle derives from the fundamental principles of internationally applicable environmental law. This policy requires each country to be aware of the types of activities that cause pollution and environmental damage in its own country and other countries. A polluting country must make its best efforts to prevent environmental damage from its production and consumption activities. Prevention is the third principle. The purpose of the precautionary policy is to take countermeasures against environmental damage. This theory focuses on conditions that may or may not occur in the future for an activity performed in the present. This principle was first used in the World Charter for Nature and adopted by the United Nations in 1982. There is also a need for global solutions to fundamental global problems. Regulation of environmental taxes should therefore be an international debate and countries' governments should involve international organizations and entrepreneurs.

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