

# **RESEARCH THESIS**

## **REVIEW OF THE IMPLEMENTATION OF EARMARKING TAX POLICY ON CARBON TAX COLLECTION AS THE MAIN FINANCING SOLUTION FOR OVERCOMING NEGATIVE EXTERNALITIES OF CARBON EMISSIONS IN INDONESIA**

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UNIVERSITAS HASANUDDIN  
MAKASSAR  
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As one of the requirements to obtain  
Bachelor of Economics degree

Complied and submitted by

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Submitted to

**ACCOUNTING DEPARTMENT**  
**FACULTY OF ECONOMICS AND BUSINESS**  
**UNIVERSITAS HASANUDDIN**  
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# RESEARCH THESIS

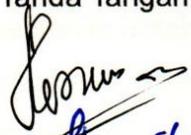
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## PREFACE

Praise and gratitude the authors pray to God Almighty for His blessings, mercy and grace, the author can complete the preparation of this thesis with the title "Review of the Implementation of Earmarking Tax Policy on Carbon Tax Collection as the Main Financing Solution to Overcoming Negative Externalities of Carbon Emissions in Indonesia". This thesis is made as the end of a series of studies as well as one of the requirements for taking the bachelor's exam at the Faculty of Economics and Business, Department of Accounting, Hasanuddin University.

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The author realizes that the preparation of this thesis still has many shortcomings. Therefore, the authors expect constructive criticism and suggestions for better writing and hopefully this thesis can provide benefits to all interested parties.

Makassar, 29<sup>th</sup> Desember 2022

Nita Tilana Baan Lallo

## ABSTRAK

***Review of the Implementation of Earmarking Tax Policy on Carbon Tax Collection as the Main Financing Solution for Overcoming Negative Externalities of Carbon Emissions in Indonesia***

**Tinjauan Penerapan Kebijakan Earmarking Tax pada Pemungutan Carbon Tax Sebagai Solusi Pembiayaan Utama Mengatasi Eksternalitas Negatif Emisi Karbon di Indonesia**

Nita Tilana Baan Lallo

Andi Kusumawati

Hermita Arif

*The worsening world climate conditions prompted the formulation of a policy that could reduce the increase in the earth's temperature, mostly from greenhouse gas (GHG) emissions. The carbon tax policy is formulated as a solution to this problem. The carbon tax is a tax imposed on economic activities that have the potential to produce carbon emissions. The need for a carbon tax policy to be implemented in Indonesia is essential, given Indonesia's commitment to reduce the amount of GHG emissions as stated in the Paris Agreement, an agreement between countries that regulate GHG emission reduction. In addition, the Indonesian economy, which is still entirely dependent on the energy sector that produces carbon emissions, has further strengthened the urgency of the presence of a policy that can reduce these emissions. Several countries have started implementing carbon tax policies with their respective formulas that are adjusted to the structure and conditions of their economy. Indonesia itself cannot simply implement a carbon tax policy without a proper model. The government must also consider various impacts, such as the increase in the price of primary goods at the final level felt by the community. The allocation of revenue received from the application of carbon tax must also be a factor that is well studied so that the government can adequately distribute it without reducing the main objective of implementing the carbon tax itself.*

**Keywords:** *carbon tax, emission, environment, environmental tax, externality, paris agreement, climate change*

Kondisi iklim dunia yang semakin memburuk mendorong untuk dirumuskannya suatu kebijakan yang dapat menekan tingkat kenaikan suhu bumi yang kebanyakan berasal dari emisi gas rumah kaca (GRK). Kebijakan carbon tax dirumuskan sebagai suatu solusi atas permasalahan tersebut. Carbon tax adalah pajak yang dikenakan atas aktivitas ekonomi yang berpotensi menghasilkan emisi karbon. Kebutuhan akan kebijakan carbon tax untuk diterapkan di Indonesia cukup penting, mengingat komitmen Indonesia untuk mengurangi jumlah emisi GRK yang tertuang dalam Paris Agreement yaitu perjanjian antar negara yang mengatur tentang pengurangan emisi GRK. Selain itu, perekonomian Indonesia yang juga masih cukup bergantung pada sektor energi yang menghasilkan emisi karbon semakin memperkuat urgensi dari hadirnya suatu kebijakan yang dapat mengurangi emisi tersebut. Beberapa negara telah mulai menerapkan kebijakan carbon tax dengan formula mereka masing-masing yang disesuaikan dengan struktur dan kondisi perekonomiannya. Indonesia sendiri tidak dapat semata-mata langsung menerapkan kebijakan carbon tax tanpa adanya suatu model yang tepat. Berbagai dampak seperti kenaikan harga barang-barang primer pada tingkat akhir yang dirasakan oleh masyarakat juga harus menjadi suatu pertimbangan. Pengalokasian pendapatan yang diterima dari penerapan carbon tax juga harus menjadi faktor yang ditelaah dengan baik agar dapat didistribusikan sebagaimana mestinya tanpa mengurangi tupuna utama dari penerapan carbon tax itu sendiri.

**Kata kunci:** pajak karbon, emisi, lingkungan, pajak lingkungan, eksternalitas, perjanjian paris, perubahan iklim

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# CHAPTER I

## INTRODUCTION

### 1.1 Background

The issue of environmental damage is an issue that is often debated both nationally and internationally and in both formal and non-formal forums. The issue of environmental damage cannot be ignored, research results from Standard and Poor's (2014) Indonesia is an archipelagic country with more than 17,000 islands and is vulnerable to the risks of climate change. Various climate problems that can be felt today such as water scarcity, damage to land ecosystems, damage to ocean ecosystems, decreased health quality, food scarcity. According to the head of the BMKG, Dwikorita on August 26 2021, rising temperatures in Indonesia are resulting in increasingly extreme weather with increasing intensity, longer duration and more frequent frequency. Although on average, in general, Indonesia has very low surface temperatures, but if we look more specifically for each city, several cities in Indonesia actually have temperatures higher than global temperatures. From 1981-2018, Indonesia experienced a trend of increasing temperatures of around 0.03 degrees Celsius per year which resulted in many climate changes which could increase hydrometeorological disasters which currently account for 80 percent of the total disasters in Indonesia.

In the theory of historical materialism, Marx in the 19th century explained that the relationship between humans and nature conditioned each other where nature conditioned humans absolutely or it could be said that nature was a pre-material condition before humans existed, and humans could condition nature relatively or it could be said that humans could condition nature. even within the confines of nature itself. Referring to this theory, environmental damage cannot be

separated from human intervention, where nature has its own mechanisms for decomposing and multiplying, but nature is seen as not limited to being brutally exploited. At present there is increasing industrial development, both the agricultural, oil and gas and other non-oil and gas industries which has an increasing impact on the pattern of environmental pollution which includes air, soil and water, which is caused by the waste products of these industries.

If seen from Indonesia's commitment at the Paris conference, Indonesia has agreed in Law number 16 of 2016 to maintain the earth's temperature at 1.5 degrees Celsius and not exceed 2 degrees Celsius and Indonesia also has a commitment to reduce emissions by 2030 by 29% nationally and 41% with international support, with each emission proportion: forestry 17.2%, energy 11%, agriculture 0.32%, industry 0.10%, and waste 0.38%.

For this reason, it is necessary to prevent environmental damage caused by industrialization through controlling environmental pollution either by making policies on industrial management or creating technology to manage waste and reduce carbon emissions. Various conferences both internationally and nationally discuss and find solutions to prevent environmental damage caused by industrial activities. Environmental accounting is a social responsibility by a company that creates negative externalities from the company's own economic activities by applying environmental costs. This concept aims to increase company awareness of the economic activities carried out and the negative impact on the environment and at the same time linking companies with non-profit institutions engaged in the environmental sector. The purpose of environmental accounting is clear in the form of awareness to companies so that they can set aside the profits earned for the benefit of the environment.

One of the efforts to reduce negative externality or the negative impact of a company's economic activity is by implementing an environmental tax (green tax). Environmental tax is a public policy, according to James Anderson (1979) public policy is "a series of actions that are intended and carried out and followed by an actor or a number of actors regarding the existence of a particular problem. The concept of environmental tax is actually not a new concept, environmental tax itself has been introduced by A.C Pigou (1920) in his theory, namely The Welfare Theorem or Pigouvian Taxes. The concept offered by Pigou departs from his concern over the negative impacts caused by economic activities. which damages the environment which will disrupt the welfare of society and disturb the next generations. This concept also uses taxes on economic activities that result in negative externalities or negative consequences of economic activities (production and consumption) on third parties (the public or the environment) ) that are not related, for example, namely environmental pollution, radiation and evictions. Society suffers as a result of economic act activity and there is no compensation for it.

In Law no. 28 of 2007 Article 1 point 1 states that taxes are mandatory contributions to the state owed by individuals or entities that are coercive based on the law, by not getting compensation directly and used for the needs of the state for the greatest prosperity of the people. Taxes are coercive and are one of the sources of funds that will be utilized to provide fuel and electricity subsidies, construct public facilities, fund education and other general community needs. Broadly speaking, there are two main tax functions, namely the budgetary function and the regularend function. Where when viewed from the goals and objectives of environmental taxes, it can be said that the regularend function is more emphasized than the budgetary function. However, there is a need for further

studies regarding the regular end function attached to the environmental tax that is to be implemented in Indonesia or on the contrary, the plan for implementing environmental tax in Indonesia places more emphasis on fiscal policy which places more emphasis on incorporating as much money into the local treasury.

Carbon tax is one of the environmental tax instruments that can be one of the national efforts in Indonesia that we can apply to control emissions through coercive collection. The purpose of a carbon tax is to mitigate externalities associated with carbon emissions. When there is no enactment of rules that control externalities in economic activities that produce carbon emissions, this will cause individuals who carry out activities that have an externality impact to distort prices because they are priced relatively too low because individuals do not consider the costs of emissions that produce externalities. The existence of a carbon tax will force individuals to consider activities that have an impact that will be felt by other parties. Another goal of a carbon tax is to reduce greenhouse gas emissions by providing funds that can be used for carbon emission mitigation programs.

The carbon tax will be a source of funds or as a budgetary function for the state but not specifically for controlling environmental problems or internalizing externality problems as the goal of a carbon tax or a regular function if it only stops at discussing the concept of the tax, meaning it is important to discuss how to allocate carbon revenues tax is formed, meaning that another important element is how income from tax proceeds is used by the government (Gevrek & Uyduranoglu, 2015).

One of the income allocations that is commonly used by countries that have implemented a carbon tax is the allocation for green spending (Carl & Fedor, 2016). Allocation of green spending means that tax revenue will be allocated to finance all expenses related to the environment. An example of a country that allocates a

carbon tax in the form of earmarking is Japan, Japan's carbon tax revenue is allocated 100 percent for tax purposes, such as renewable energy infrastructure, energy-efficient equipment for small and medium-sized companies, and energy conservation programs (Japan Ministry of the Environment, 2012).

Berangkat Departing from the goal that Indonesia wants to achieve, namely reducing emissions by 29 percent by 2030, the allocation of carbon tax revenues in the form of earmarking is likely to be a solution for the Indonesian state, while the target of the proportion of EBT by 23 percent by 2025 that Indonesia must achieve can be achieved by using income from carbon tax as the main source of financing without the need to wait for sources of financing from foreign investment (IESR, 2020). Based on the results of the research above, the authors will conduct research with the title "**Review of the Implementation of Earmarking Tax Policy on Carbon Tax Collection as a Solution to Overcoming Negative Externalities of Carbon Emissions in Indonesia**".

## **1.2 Research Questions**

The main problem is taken based on the background that the researcher describes as follows: How can the carbon tax formula applied in Indonesia overcome the negative externalities of carbon emissions? From this general question, several questions were derived as follows:

1. How is the comparison of the application of carbon tax in countries that have implemented it?
2. What is the urgency of implementing carbon tax in Indonesia?
3. What are the potential implications of carbon tax if applied in Indonesia?
4. How effective is earmarking tax in the formulation of carbon tax policies if implemented in Indonesia?

### **1.3 Research Purpose**

The purpose of this study is to see and examine the implementation of carbon tax policies in various countries that have implemented them and to see the urgency and implementation of carbon tax policies in Indonesia as well as to see the effectiveness of earmarking tax policies in the formulation of carbon tax policies if implemented in Indonesia.

### **1.4 Significance of the Research**

#### **1.4.1 Theoretical Significance**

The results of this study are expected to provide insight or knowledge related to the mechanism of allocating carbon tax revenues by using earmarking taxes on carbon tax policies as the main financing solution to overcome negative externalities caused by the impact of carbon emissions in Indonesia. This research is expected to be able to create tax policies related to the environment and can contribute to the development of knowledge in the field of environmental accounting (green tax).

#### **1.4.2 Practical Significance**

This research can be a reference for consideration, reference, comparison and additional literature for the government as a stakeholder who is responsible for making policies in responding to carbon taxes that are appropriate in order to create policies that can solve environmental problems.

#### **1.4.3 Policyal Signification**

This research is expected to be able to provide consideration and contribution to the government as the stakeholder responsible for making policies that are able to answer problems with efforts to allocate a more specific carbon tax

to address environmental problems. This research is expected to be able to make tax policies related to the environment.

### **1.5 The Scope of Research**

The scope of research is a carbon tax policy that will be formed by the government in Indonesia, where the carbon tax policy that is present must be aligned with the problem to be resolved for this reason it is considered important to make additional policies in order to create an allocation of carbon tax revenue that can solve environmental problems more specifically, namely by using the company's earmarking tax policy.

### **1.6 Structure of Research**

#### **CHAPTER I INTRODUCTION**

This chapter is the first part of the thesis, which leads the reader to be able to answer questions about what and why the research was conducted and where and to whom the research was directed. Therefore, this introductory chapter basically contains background, problem formulation, research objectives, research usefulness, research scope, and writing systematics.

#### **CHAPTER II LITERATURE REVIEW**

The answer to a problem must use scientific knowledge as a basis for argumentation in studying the problem. Before submitting a hypothesis, researchers must present theories from research results that are relevant to the problem under study, which is described in this chapter. In addition, researchers can add empirical reviews that form the basis or reference in this study.

### CHAPTER III RESEARCH METODOLOGY

The main points contained in the research methods chapter include at least research design, place and time, population and sample, types and sources of data, data collection techniques, research variables and operational definitions, research instruments and data analysis.

### CHAPTER IV RESEARCH RESULT AND DISCUSSION

In research testing hypotheses, the writing of the results is best divided into two major parts. The first part contains the characteristics of each variable. The second part contains a description of the results of hypothesis testing. If possible, a discussion of research findings can be added.

### CHAPTER V CONCLUSION AND SUGGESTION

In chapter V or the last chapter of this thesis contains three main points, namely conclusions, suggestions and research limitations.

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **2.1 Review of Theories and Concepts**

##### **2.1.1 Public Policy Theory**

Policy is an effort to achieve certain goals. Policy, which is a kind of answer to a problem, for that policy is an attempt to prevent a certain problem with a certain solution or with directed action (Prof. Dr. A. Hoogerwerf). Policy is a conscious action step taken by a person or group to deal with a problem or problem at hand (James E. Anderson, 1978).

David Easton (1953), in his book "The Political System", describes the public policy as disseminating values that bind to all citizens but only those who are willing to work on a decision from the government rate it up. Public policy is defined in terms of specific actions that have jurisdiction or science that aims to pay for the needs of the community or certain groups of companies that have interests and influence as much as possible (Chief J.O. Udoji, 1981).

According to Thomas R. Dye (1987), in his book "Understanding Public Policy", defines whether public policy is either what the government chooses to do or not to do (whatever government chooses to do or not to do). It means that public policies are not paid for by the government, which are hurt by the government, but also include those that are not done by the government, for example, namely managing conflict.

So in public policy, namely the various actions that are being manipulated or implemented or not carried out by the government with specific objectives for the interests of all elements of society.

## **2.1.2 Tax Basis Theory**

### **2.1.2.1 Definition of Tax**

According to Law No. 28 of 2007 Article 1 point 1, taxes are obligatory contributions to the state owed by private persons whose benefits are non-bankable and are collected by law, do not receive other rewards directly and are used for the needs of the state for the greatest possible prosperity of the people.

There are several definitions of tax based on the different opinions of different experts but have the same core as follows:

According to Soemitro, "Taxes are people's contributions to the state based on legislation (which can be forced) by not getting lead services (counter-achievements) that can be shown directly and which can be used to pay for public expenses" (Waihluyo, 2017: 3).

The definition of tax according to Nj. Peldman in his work "De Over Heidsmiddelen Vain Indonesiai", taxes are achievements that are enforced by one person and he feels that it is primarily paid for by the owner (according to norms that are fixed in terms of performance in general), with no compensation that can be given to individual matters, meaning namely to finance government spending (Algoes dain Trisnawan, 2018: 6).

The definition of tax is defined by S.I. Djajadiningrat, namely "tax is an obligation to provide a portion of wealth to an individual or entity to the state caused by a condition, deed, event that gives a certain position, but not as a punishment and according to the regulations set by the government, it can be coerced but there

is no reciprocity to the state directly to ensure welfare in general” (SitiOfficial, 2009:1).

Based on several definitions or definitions of tax, according to experts, it can be concluded that tax is a mandatory and coercive contribution to individuals or entities that have been regulated by law for the benefit of the state.

The characteristics of the tax according to (Damayanti, 2012:31), namely:

1. Taxes are collected based on applicable laws and implementing regulations so that they can be forced.
2. Taxes are a form of contribution which is imposed by the people to the government.
3. Taxes are collected by the state, both the central government and the regional government.
4. In collecting taxes, it cannot be shown that there is a direct contradiction individually to the government.
5. Taxes are used as funding for government expenditures.

#### **2.1.2.2 The Function of Tax**

Taxes are a very important variable in a country because taxes are used as a vehicle for financing state expenditures, especially in financing development due to taxes as a source of state income which is used to finance all expenditures including development expenditures, Sumarsan (2013: 5). Based on the explanation above, the tax has several functions as follows:

1. Budgeter function

Taxes are one of the sources of government cash receipts, meaning that taxes function as a vehicle for cash from the public which is collected by the state in accordance with applicable laws to finance state expenditures.

As a source of state revenue, taxes are used to finance government expenditures, both routine and development expenditures. Routine financing here includes personnel expenditure, maintenance, goods expenditure, and so on. The financing for development itself is taken from domestic revenue minus routine expenditure.

The state is also trying to put in as much money as possible for the state treasury by extensifying and intensifying tax returns through improving tax regulations such as Income Tax (PPH), Land and Building Tax (PBB), Value Added Tax (VAT), Sales Tax on Goods Luxury (PPnBM), and so on.

## 2. Regulerend function

Tax as a regulerend function is used as a tool to regulate society and the structure of wealth between economic actors so that they can act according to government directives, meaning that taxes are a tool to regulate or carry out government policies in the economic and social fields.

The regulatory function in this tax is as a tool to achieve certain goals outside the financial sector, meaning that taxes are not a tool to get as much state revenue as possible but to be used as a policy capable of directing and regulating in order to achieve that goal. For example, the pollution principle is applied by the government to pay for any losses from environmental pollution and at the same time protect the environment.

### **2.1.2.3 Environmental Tax Reform**

Environmental tax reform is defined as mandatory and unrequited payments to governments whose collection is based on taxation that is relevant to environmental objectives, the OECD (Organization for Economic Co-operation for Development, 2004).

From the above definition it can be interpreted how taxes are considered as the only objective basis for analyzing environmental taxes regardless of what form, name, purpose of the tax is considered, the motivation for implementing it, or the use of the income collected. ETR itself emphasizes the importance of using revenues derived from environmental taxes, for example in financing the achievement of sustainable development goals.

ETR itself is a reform of the national taxation system in which there is a shift in the tax burden from conventional taxes, for example on labor to activities that damage the environment. such as the imposition of taxes on resource use or pollution. The tax burden must be given to those who have a negative impact so that it can change the pattern of behavior and mindset of consumers and producers about the importance of seeing the negative impacts presented by economic practices that have an impact on social and the environment so that the purpose of the tax burden throughout the economy becomes clearer and better. because it is distributed from a sustainable development perspective, EEAI (European Environmental Agency), 2005:84.

### **2.1.3 Externality Concept**

Externalities are costs or benefits that arise due to some economic activities imposed on other parties who are not included in these economic activities, meaning that externalities can be described as the impact felt by someone who arises as a result of the actions of other people (Henry Faizal Noor, 2015 :179).

According to N. Gregory Mankiw (2012), externality is the impact of one's actions on welfare (utility or profit). If the impact that arises is detrimental, then it is called a negative externality. Vice versa if the impact is beneficial then it is called a positive externality.

Externalities form the relationship between economic agents, both producer and consumer agents, which are located outside the economic price system, for example, the direct impact of factory pollution on society and this externality is not directly regulated by prices, resulting in efficiency in market stability that cannot be applied. However, producer and consumer agents can be directly affected by the activities of these economic agents, sometimes referred to as spills or environmental effects (Cash E Karl & Ray C Fair, 2007: 388).

The following types of externalities when viewed in terms of impact are divided into two, namely:

1. Positive externalities

Positive externalities are forms of one person's actions that can be beneficial to other parties, but these benefits do not provide a profitable composition or these benefits are not allocated to the market. This means that if the activities of a person are beneficial to other people and these other people receive benefits by not paying or providing a price for the perceived benefits, the true value of these activities is not included in market activities, namely private costs (private costs) to producers are higher than social costs (social costs).

Contohnya adalah pengusaha madu yang memelihara lebah untuk menghasilkan madu, maka lebah akan mencari sari madu dan ini akan berdampak positif atau menguntungkan bagi pengusaha anggrek meskipun pengusaha madu tidak memperhatikan eksternalitas yang ditimbulkan kepada pengusaha anggrek. Karena eksternalitas positif, memungkinkan terjadi penyerbukan dan pembuahan terhadap tanaman anggrek oleh lebah sehingga menghasilkan eksternalitas positif bagi pengusaha anggrek.

## 2. Negative externalities

Negative externalities are costs imposed on someone outside of the production activity of a product, meaning that negative externalities will occur if the adverse impact of an activity on other people does not get fees or compensation, an example of negative externalities is when someone smokes and other people are besides inhaling cigarette smoke will receive a negative impact.

### 2.1.4 Environmental Accounting

According to the United States Environment Protection Agency (US EPA) in its bulletin describing environmental accounting as "an important function of environmental accounting is to describe environmental costs so that they are noticed by corporate stakeholders, which can encourage identification of ways to reduce or avoid costs costs while at the same time improving environmental quality" (Ikhlas, 2008). According to Satriago, environmental accounting is an accounting process to reduce the negative environmental effects of conventional practices and information system planning and environmental monitoring systems in support of management decisions and the existence of a sustainable system (Utama, 2016: 92).

Environmental accounting is a form of service activity that has the function of providing accounting information that can be influenced by the company's response to problems that arise and can threaten the environment and other living things (Ratulangi, 2018: 411). Accounting is used to assess the full environmental costs associated with production activities and products, processes, inputs in the form of raw materials, energy, water, and outputs in the form of pollution, waste water and land waste (Pratiwi, 2013:9-10)

United States Environment Protection Agency (US EPA) adds that the term environmental accounting is divided into two. First, environmental accounting is a cost that directly impacts the company as a whole or is referred to as personal costs while secondly, environmental accounting also includes individual, community and environmental costs of a company that do not receive compensation. Environmental accounting is defined as prevention, reduction, and avoidance of impacts on the environment (Ikhlas, 2008).

#### **2.1.4.1 Environmental Tax**

According to Gallagher and Muechlegger (2008), defines environmental taxes as taxes imposed on individual or group activities that produce carbon emissions. Environmental tax is tax collection that functions as a support for the development of a country and is used to preserve the surrounding environment so that there is harmony between economic growth and environmental preservation (Pratiwi, 2014: 444).

Environmental tax is an excise tax where this tax is a collection of environmental pollution causes or goods whose use produces pollutants. The main target of environmental taxes is to reduce degradation of the environment and other harmful effects on humans and other living things (Angreani, 2017:17). Environmental taxes can function as an effort to improve environmental maintenance as well as to prevent and overcome negative externalities to the environment (Hasan and Puspitasari, 2008:535).

Beberapa Several mechanisms for implementing environmental taxes include a fuel tax from non-renewable natural resources, a nitrogen tax, a carbon emission tax, and the application of a plastic waste tax. Environmental tax is a type of instrument in the economy that functions to address environmental problems by

encouraging changes in the behavior of companies, organizations, communities, households and individuals. The resulting tax levied will serve to reduce emissions.

#### **2.1.4.2 Carbon Tax**

Carbon tax is a type of tax imposed on economic activities that have the potential to generate carbon emissions (British Columbia Ministry of Finance, 2013). Carbon taxes when viewed from an economic perspective carbon taxes can significantly reduce carbon emissions, where carbon emissions are caused by fossil fuel products, aviation fuel, and so on (Sitorus and Pratysto, 2018: 98-99). The principle of carbon tax is that whoever makes the emission must pay, (Hindarto, 2018:62).

Several countries have implemented carbon taxes, especially on the European continent, namely Finland. Finland became the first country to implement a carbon tax policy in 1990, Finland's carbon tax is currently imposed on the transportation system and the use of other fossil fuels. The next country to implement a carbon tax is Denmark, where Denmark itself implemented a carbon tax in 1992 and taxes that enter the industrial, household and commercial building sectors which have a tax value of 170 Danish Krown per tonne of CO<sub>2</sub>, about 45 percent of national emissions. in Denmark it is included in the carbon tax (Hindarto, 2018:63).

Other countries in Asia have started to follow the implementation of carbon taxes, such as Japan and India. Japan implemented a carbon tax in 2012 with a tax object on the use of fossil fuels, and Japan itself has implemented a carbon tax and already covers about 70 percent of total carbon emissions. Meanwhile, in the country of India itself, carbon taxes are considered very effective in reducing greenhouse gas emissions and at the same time realizing low-carbon development

by providing financing from the results of carbon taxes. And in Indonesia itself the implementation of the carbon tax will begin to be implemented on June 1 2022, the tax object that will be applied in Indonesia will be applied to the Steam Power Plant (PLTU) sector, even though this carbon tax itself reaps pros and cons in several layers of society.

In general, in implementing a carbon tax, there are three things that need to be considered, namely the scope and coverage, points of taxation, and tax rate, Bordoff and Larsen (2018). The imposition of a carbon tax on these sectors certainly has a rationalization as well as a strong tax base. In their journal, Carl and Fedor (2016) stated that there are three forms of general revenue allocation used by countries that implement carbon taxes, namely allocations for green spending, entering into general funds, and revenue recycling.

Here it is explained that the allocation for green spending, which can be interpreted as tax revenue, will be allocated to finance all expenses related to the environment, for example financing renewable energy infrastructure as a form of low-carbon investment (Burke, 2019).

### **2.1.5 Earmarking Tax**

Earmarking tax is a tax that is collected to finance certain expenses more specifically. Following are some definitions of earmarking tax according to experts, according to Ranjit Teja (1988:523) "the earmarking taxes refer to the designation of funds either from a single tax base or from a wider pool of revenues to a particular end use", which means earmarking tax refers to the design of funding from either one source or multiple sources of revenue for a specific end use.

Besides that, another definition of earmarking tax explained by McCleary (1991:82) is "earmarking is the practice of assigning revenue-generally through statute or constitutional clause-from specific taxes or groups of taxes to specific

government activities or areas of activity", which meaning that earmarking is the common practice of assigning revenue (through a constitution or regulation) from a particular tax or group of taxes to function as financing for specific government activities. The concept of earmarking in particular is not only for taxes but can be applied to other forms of tax revenue.

Earmarking characteristics can be seen in the use of funds from the tax proceeds. Earmarking tax also has important characteristics, namely the allocation of tax proceeds which is only used to finance activities related to the tax paid. Another characteristic of earmarking is when there is a strong beneficial relationship between tax payments and the use of tax collection results to finance the expenditure needs of the tax sector (Newbwry and Santos, 1999:104-105). According to McCleary (1991) earmarking tax is closely related to public provision, where earmarking is used to cover the need for funds in the provision of public goods and services. In addition, earmarking exists because each public good has its own source of financing.

Earmarking tax is divided into two types, namely, the first is full earmarking tax where the earmarking tax is designed as the only source of funding for the program, the second is partial earmarking tax where the earmarking tax is designed not as the only source of financing but there are other sources of income allocated to finance the program (Michael, 2008:2).

OECD data shows that 14 percent of countries in the world that enforce carbon tax regulations in their countries also use earmarking tax regulations in the environmental sector or green spending. An example is the country of Japan, where Japan allocates carbon tax revenue for environmental purposes (anti-global warming development) and Japan itself allocates 100 percent of their carbon tax revenue. Revenue from Japan's carbon tax is also allocated specifically for

renewable energy infrastructure, energy conservation programs, and energy-efficient equipment for small and medium companies, Japan Ministry of the Environment (2012).

## 2.2 Empirical Studies

As for similar research that has been done before which serves as a reference and support for research, namely Sujarweni (2015: 64). Because the existence of previous research will help the writer in dealing with writing related to the research title taken by the author. There are several previous studies related to this research shown in the following table:

Tabel 2.1 Empirical Studies

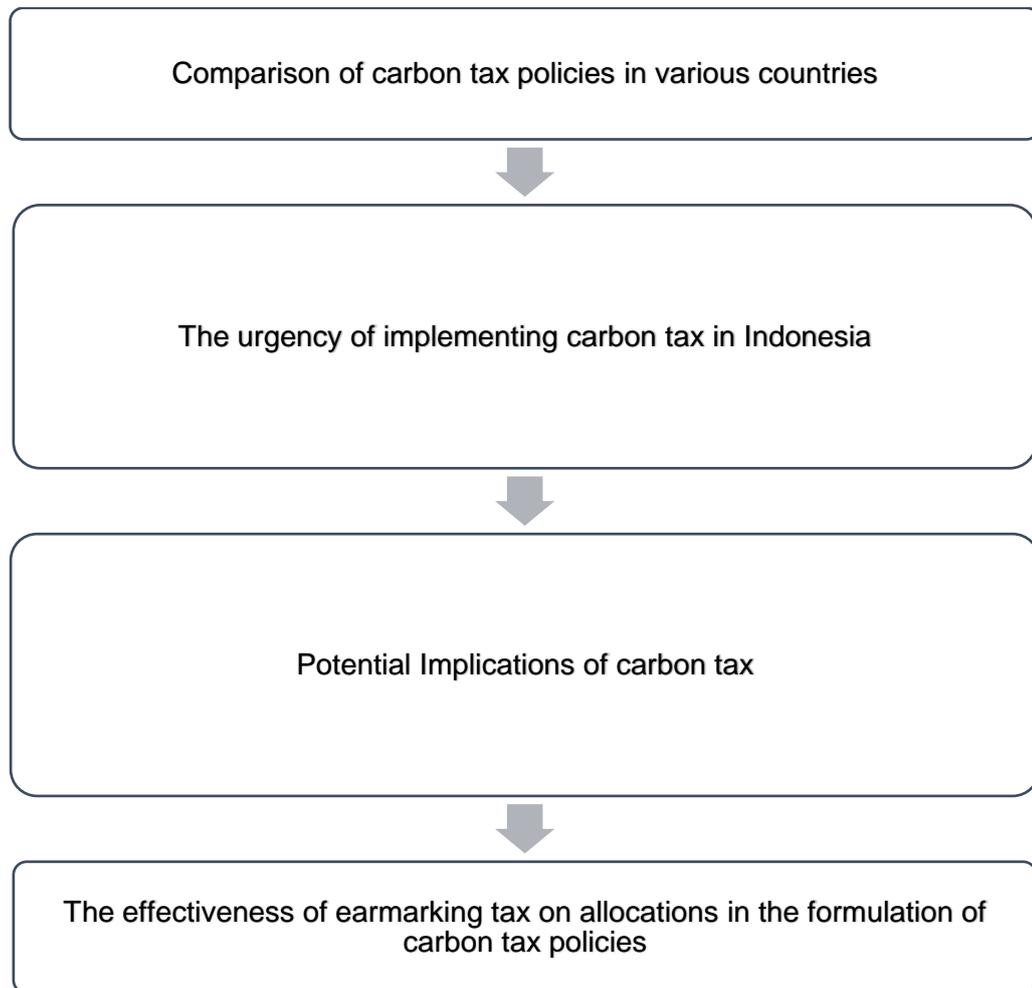
Penelitian	Judul	Hasil penelitian
<i>Donald B. Marron dan Adele C. Morris (2016)</i>	How to Use Carbon Tax Revenues	The research results also show that climate policy advocates must recognize that reducing greenhouse gas emissions does not only depend on the policies put in place, but also on the policies that remain in place. Many emission reduction investments involve large expenditures on long-lived capital, such as power plants and industrial facilities. A carbon tax package that supports the hope of businesses and people that the tax will last over the long term will be more environmentally successful than people think may not survive the next election. Australia's experience illustrates how unpopular climate policies can be reversed in a future government. Therefore, policy makers should pay particular attention to identifying revenue uses that build sustainable support for carbon taxes.

<p><i>Jairo Yunis dan Elmira Aliakbari</i> (2020)</p>	<p>Carbon Pricing in HighIncome OECD Countries</p>	<p>The results show that no high-income OECD country follows the textbook model of an optimal carbon pricing system, which undermines theoretical efficiency by design and implementation. The reality is that governments have a variety of policy alternatives to address negative emission externalities depending on the level and depth of policy intervention. Policy makers need to review the design of carbon pricing systems and repeal the command and control regulations that undermine the potential benefits associated with pricing carbon.</p>
<p><i>Muzzar Kresna, Ayu Nova Lissandhi, dan Kurnia Novianti</i> (2014)</p>	<p>Application of Taxes as an Instrument for Controlling Negative Impacts on the Environment</p>	<p>Based on research results, the environmental tax reform mechanism is carried out by substituting a portion of the proportion of state revenue from income tax with income from environmental tax, namely through a reduction in income tax rates which is offset by setting tax rates on activities or sources that give rise to negative externalities to the environment. , as shown in illustration 3.1 above. The environmental tax reform in the Czech Republic was carried out by reducing the level of income tax and social security contribution contributions followed by the imposition of a tax on the use of non-renewable energy resources and a tax on activities that could pollute the natural environment. Where the implementation of environmental tax reform will generate prospects for a double dividend condition, namely a condition where the implementation of environmental taxes can produce two main benefits, namely for a country's macroeconomic conditions in the form of stimulating economic</p>

		<p>growth in terms of increasing sustainable or environmentally friendly domestic consumption while at the same time encouraging competitive advantage in the labor market, and environmental improvement. Furthermore, through the application of environmental taxes, the polluters are actually given the freedom to pollute the environment but are accompanied by consequences of sanctions in the form of a price to be paid for each residual unit produced. In addition, the essence of the environmental tax approach is to provide incentives or opportunities for polluters to innovate in finding the most efficient production methods regarding the negative impacts of the resulting residuals.</p>
<p><i>Hafidh Nadhor Tsaqib (2021)</i></p>	<p>Implementasi Carbon Tax di Indonesia: Optimis atau Realistis?</p>	<p>The research results show that similar to other countries in the world, Indonesia has the potential to implement carbon tax policies in order to reduce and control carbon emissions. However, there are several things that must be considered before implementing a carbon tax, such as the scope, tax points, tax rates, and the allocation of tax revenues. The scope and points of taxation that are possible in implementing carbon tax in Indonesia, namely in the energy sector and at the upstream to midstream level, even hybrid. However, application at the downstream level is of course quite difficult to implement in Indonesia due to the increasing number of entities to be taxed, causing a high cost of taxation. The revenue allocation mechanism is also an important consideration, both when using an earmarking mechanism to encourage environmental</p>

		<p>investment and/or carrying out tax burden shifting to mitigate impacts on society. On the other hand, it is also suspected that the carbon tax policy cannot work alone, so it needs to be balanced with the development of renewable energy investments, maximizing the use of alternative energy, as well as complementary policies that are in line with carbon taxes. Thus, people are encouraged to reduce the use of fossil fuels and have the option to switch to using energy that is more environmentally friendly so that carbon emissions can be reduced.</p>
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### 2.3 Kerangka Pemikiran



Gambar 2.1 Kerangka Pemikiran