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APPLICATION OF CARBON TAX ON TAXPAYERS

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ABSTRACT
The increase in carbon emissions every year is a problem on a global scale that is increasingly worrying. By ratifying the Paris Agreement, Indonesia is committed to participating in mitigating carbon emissions in the world. To prove this commitment, the Indonesian government implemented a fiscal policy, namely the carbon tax policy. The purpose of this study is to analyze how much influence the implementation of the carbon tax policy has on taxpayer readiness. In this study, there are two types of data, namely primary data obtained through field studies with questionnaires and secondary data obtained through literature studies and other references relevant to the research topic. The quantitative research method with simple linear regression analysis was chosen by the researcher to determine the effect of the variable implementation of carbon tax on the variable of taxpayer readiness. The results of the study indicate that the implementation of the carbon tax policy has a negative effect on taxpayer readiness. This means that if the carbon tax policy is implemented, it will have an effect on increasing taxpayer readiness. With this research, it is hoped that it can be used as material for evaluation and government considerations in the perspective of taxpayers in relation to the implementation of carbon tax policies.

Keywords: Carbon Tax; Carbon Emissions; Taxpayers

INTRODUCTION

The growing population and production, which began with the industrial revolution, caused the need for energy to become even greater. So that along with the demands of the times, innovations in the use of alternative energy use coal and oil were introduced which are intended to meet these needs (Ratnawati, 2016). Like two sides of a coin, the existence of innovation is also balanced with the consequences that must be faced. The new issue of climate change as a result of carbon emissions resulting from burning coal and oil has become a crucial issue whose solution requires a lot of consideration.

The urgency of climate change has always been a topic that is often discussed. Not only in the national scope, environmental issues are problems on a global scale because of the magnitude of the impact. With the increasing world concern about climate change, member countries of the United Nations (UN) agreed on global action that focuses on improving the environment. The Paris Agreement is an agenda that was born out of the agreement, which regulates controls to suppress global warming below 2oC and is targeted to reduce it to 1.5oC (Hilwa Nurkamila Maghfirani et al., 2022). As one of the countries that ratified the Paris Agreement, bridged by the NDC (National Determined Contribution) Indonesia is committed to participating in climate change mitigation through efforts to reduce greenhouse gas emissions by 29% on its own and with international assistance by 41% until 2030 (DG PPI KLHK, 2017).

To prove this commitment, through fiscal instruments, the government presents a new policy, namely Law Number 7 of 2021 concerning Harmonization of Tax Regulations, one of the main topics of which is the regulation of the implementation of carbon tax. After a long time being only a government discourse, finally starting on April 1, 2022 the carbon tax policy began to be implemented in Indonesia with the hope of reducing emissions released by carbon gas and also increasing state treasury revenues.

The implementation of new policies, of course, has its own challenges. In addition to budget challenges, the carbon tax policy also has other challenges, namely from the perspective of taxpayers. Industry players who meet the requirements of taxpayers are required to take part in this policy in relation to the fulfillment of their obligations as compensation for the impacts resulting from their production. But on the other hand, industrial management also has other obligations such as payment of employee salaries, corporate income taxes, and others

(Daniel, 2018). So in this case, the readiness of taxpayers to face new policies also needs to be considered by the government.

This study refers to research (Andi, 2021) and (Wira, 2021) which show that there is a perception from taxpayers that the carbon tax policy affects taxpayer readiness. On the other hand, research (Andika, 2021) shows that the carbon tax policy has no effect on the perception or perception of taxpayers. Based on the lack of consistency of previous research, the researchers raised the theme of carbon tax research and its effect on taxpayer readiness. The elaboration of previous research is dominated by topics that focus on the point of view of policy formulation and the mechanism for implementing the carbon tax. This research has an update that focuses on the analysis of the application of carbon tax in the perspective of the taxpayer. The formulation of the problem to be answered in this study is "How does the carbon tax policy affect the readiness of taxpayers in Indonesia?"

LITERATURE REVIEW

Tax Concept

Basically, the existence of taxes raises many sharp polemics by government authorities in policy and political aspects (Saputra, 2021). According to Law no. 28 of 2007 Article 1 concerning General Provisions and Tax Procedures, taxes are defined as mandatory and coercive contributions aimed at individuals and entities with the aim of funding the needs of the state in connection with common interests.

Many of the experts have classified the tax function. One of them (Waluyo, 2011) in his book states that there are two tax functions, namely: 1) The function of budgetair, in this case, taxes as an instrument of state revenue which is intended to finance government expenditures and also in state development. By making these expenditures, of course, the government needs funds used for financing. The funds in question come from fiscal revenues and other revenue posts. 2) The regular end function, in this case, taxes as a regulatory tool that can be used as a controller of economic growth through its policies in the form of regulations. So that the stability of the national economy can be achieved with the contribution of taxes.

Carbon Emission

Greenhouse Gas Emissions by Sector Type (thousand tons of CO2e), 2001-2017 Based on 2001-2017 data from the Central Statistics Agency, the amount of greenhouse gas emissions in Indonesia is calculated based on the type of sector. Every year, the amount of greenhouse gas emissions fluctuates but is not too significant. Recorded in 2017, Indonesia has produced carbon emissions of 1.150 billion tons of CO2e. Of the sectors that have been described, it is the energy sector that dominates the source of greenhouse gas emissions. One of the greenhouse gases that contributes the most emissions is carbon dioxide (CO2). According to (Transparency, 2018 in (Kumala et al., 2021), the increase in carbon emissions is expected to increase until 2030. Therefore, in line with this in its NDC, Indonesia has launched a targeted reduction in carbon emissions until 2030.

Table 1 show the Carbon emission levels in Indonesia. Based on 2001-2017 data from the Central Statistics Agency, the amount of greenhouse gas emissions in Indonesia is calculated based on the type of sector. Every year, the amount of greenhouse gas emissions fluctuates but is not too significant. Recorded in 2017, Indonesia has produced carbon emissions of 1.150 billion tons of CO2e. Of the sectors that have been described, it is the energy sector that dominates the source of greenhouse gas emissions. One of the greenhouse gases that contributes the most emissions is carbon dioxide (CO2). According to (Transparency, 2018 in (Kumala et al., 2021), the increase in carbon emissions is expected to increase until 2030. Therefore, in line with this in its NDC, Indonesia has launched a targeted reduction in carbon emissions until 2030.

Carbon tax concept

Carbon tax is one of the fiscal policies that can be categorized as a pigovian tax. Pigovian tax itself is a tax that is devoted to correcting the impact of negative externalities (Yeremy et al., 2022). The concept of carbon tax has been applied for a long time by countries in the world, such as Finland, which became the first country to adopt this concept since 1990, then New Zealand in 2005, Ireland in 2010, Japan and Australia in 2012, England in 2012. 2013, Chile in

2014, and others (Kumala et al., 2021). The implementation of the carbon tax in these countries is considered successful, thus encouraging other countries to follow in the footsteps of this success, including Indonesia.

Basically the carbon price is a form of compensation paid to the wider community by the polluter (carbon emitter) as a sense of responsibility for the negative impacts that have been produced (Saputra, 2021). In addition, through the receipt of funds from the implementation of the carbon tax, it is allocated as a means of financing for climate change mitigation planned by the Indonesian government.

According to (Mitigation et al., 2021) the existence of a carbon tax policy has two advantages, namely it can be an instrument in mitigating carbon emissions in Indonesia as well as a source of state treasury revenue. It is hoped that the adoption of a carbon tax policy can change the behavior of people's economic activities, which initially only prioritized profit without caring about the resulting impact on the environment, becoming a green economy-oriented society by balancing interests in obtaining additional materials and caring for the environment as a form of love for fellow beings. which is on earth.

Carbon tax Collection Scheme

In relation to the implementation of the carbon tax in Indonesia, of course, there are many things that need to be prepared in order to initiate the implementation of this policy. According to (Kumala et al., 2021), the main factors that hinder the implementation of this policy are industry players and other emission sources. The application of a carbon tax will of course lead to pros and cons from the perspective of the taxpayer. So it takes rules and a strong database so that such obstacles can be prevented.

Table 1. Carbon emission levels in Indonesia

Year	Sector						
	Energy	IPPU	Agriculture	Waste	FOLU	Forest fires	Amount
2001	341.919	48.269	94.134	67.602	329.243	50.885	932.053
2002	349.485	41.688	93.856	70.063	373.189	301.753	1.230.034
2003	378.050	41.402	94.863	73.061	328.958	132.075	1.048.410
2004	380.434	43.146	96.586	75.225	475.851	232.018	1.303.260
2005	376.988	42.296	98.492	77.216	439.638	258.887	1.293.516
2006	386.100	38.641	97.828	82.578	479.246	510.710	1.595.103
2007	402.989	35.919	101.487	83.933	553.803	62.747	1.240.878
2008	391.784	36.499	98.659	85.023	513.712	81.744	1.207.420
2009	405.653	37.546	102.956	89.326	620.566	299.920	1.555.967
2010	453.235	36.033	104.501	87.669	383.405	51.383	1.116.226
2011	507.357	35.910	103.161	91.853	427.310	189.026	1.354.617
2012	540.419	40.078	106.777	95.530	487.928	207.050	1.477.781
2013	496.030	39.110	106.814	100.515	402.252	205.076	1.349.797
2014	531.142	47.489	107.319	102.834	480.033	499.389	1.768.206
2015	536.306	49.297	111.830	106.061	766.194	802.870	2.372.559
2016	538.025	55.307	116.690	112.351	545.181	90.267	1.457.821
2017	558.890	55.395	121.686	120.191	282.098	12.513	1.150.772

Source: Greenhouse Gas Inventory Report and MPV 2018, Ministry of Environment and Forestry Republic of Indonesia (2018)

The carbon tax collection scheme in Indonesia is carried out through two mechanisms, namely cap and tax (carbon taxation) and cap and trade (carbon trading) (Sutartib et al., 2021). The government sets a cap (limit for emissions that may be issued) so that entities that produce emissions exceeding the cap will be subject to a carbon tax. According to (Suryani, 2022), in the cap and trade mechanism, entities that emit emissions exceeding the cap must purchase an Emissions Permit Certificate (SIE) from the entity that emits less than the cap. In addition, entities can also purchase an Emission Reduction Certificate (SPE) as another option.

Whereas in the cap and tax mechanism, entities that issue emissions exceeding the cap are not allowed to buy SIE or SPE, but tax payments apply if there are remaining emissions that cannot be traded as a result of the restriction on the purchase of the license. The next scheme will be followed up in relation to the implementation of the carbon tax at the next stage, namely in 2025. The rate imposed for the carbon tax is a minimum of IDR 30,000/ton CO2e by taking into account the principles of fairness and affordability.

Targets for the Implementation of Carbon tax

With regard to the subject of the carbon tax, the government has decided that coal-fired PLTU (Steam Power Plant) will be the first tax subject to be imposed. This determination was not made immediately, but based on the government's consideration as well as a recommendation from the Ministry of Energy and Mineral Resources (Sutartib et al., 2021). PLTU is an energy sector with a large demand for coal so that the amount of carbon emissions produced is also very large. Carbon emissions produced by the PLTU are estimated to reach 218,044,000 tons of CO2e and a taxation of IDR 30/kg CO2e (Lolo et al., 2022). So it is not surprising that the PLTU was proposed as the first object of the carbon tax to initiate the implementation of the carbon tax, as well as to test the carbon tax mechanism.

As stated in Article 13 of the HPP Bill, the implementation of the carbon tax will be carried out in stages to industrial players that produce carbon starting in 2022. Not only applied to coal-fired power plants, the application of carbon tax will then be imposed on individuals and entities that purchase carbon-containing goods and/or generate carbon emissions in connection with its activities. In sectors other than PLTU, the implementation of the carbon tax is planned to be implemented according to sector readiness starting in 2025.

METHODS

This research design uses a quantitative research approach. Where quantitative research is an approach used to examine a particular population or sample, whose research data is in the form of numbers and measurements using statistics as a calculation tool (Sugiyono, 2019). Sources of data used in this study are primary data and secondary data. Primary data is data obtained by researchers directly from respondents, for example the results of filling out questionnaires. In this study, primary data is data from filling out questionnaires distributed by researchers to taxpayers who are the target of implementing the carbon tax, namely the PLTU sector. Researchers focused on three PLTUs in East Java as sources of research data.

While secondary data is data obtained by researchers indirectly from respondents. Usually this data is collected by data collection agencies and published to data users. Examples of secondary data are financial reports, population data, and so on. Researchers use literature such as journal articles, books and regulations that have been se Data collection techniques are carried out in two ways, namely library research and field studies. A literature study is carried out by reviewing literature and references relevant to the research topic which is ultimately used as the basis for criteria in discussing the problem in research. The field study was carried out through the process of distributing questionnaires. The questionnaire is a set of systematically arranged questions given to respondents to obtain the data needed in the study.

The data analysis techniques are: 1) Validity test, used to measure the validity of the measuring instrument used in the study. A research instrument can be said to be valid if the significance level is <0.05. 2) Reliability test, used to measure the consistency of measuring instruments used in research. A research instrument can be said to be reliable if the instrument can provide consistent score results on each measurement. Measurement of the reliability of a variable is done by comparing the value of r alpha conbrach with a value of 0.60. If the value of

r cronbrach alpha > 0.60 then the variables studied are reliable 3) Classical assumption test, used to assess whether in regression testing there are problems such as bias, data inconsistency, and so on. This type of test has normality test, heteroscedasticity test, linearity test, autocorrelation test and multicollinearity test 4) Simple regression analysis, before researchers use this data analysis technique, a variable must go through validity and reliability tests. Then the normality test was carried out to find out whether the data was normal or not. Data were analyzed by simple regression analysis. This technique only tests the data to determine the effect of one variable X and one variable Y. The research hypothesis proposed by the researcher in conducting simple linear regression analysis is:
H0 = The application of carbon tax does not affect the readiness of taxpayers
Ha = The implementation of carbon tax affects the readiness of taxpayers

RESULTS

In East Java there are 3 large PLTUs managed by PT PJB (Pembangkitan Jawa Bali) as a subsidiary of PT PLN Tbk. Reporting from its official website (https://www.ptpjb.com/about-kami/ accessed 2022), PT PJB has been established since 1995 with a focus on power generation. The company's vision is to become a leading and trusted company in the sustainable energy business in Southeast Asia. Meanwhile, the company's mission is 1) Running an innovative and collaborative energy business, growing and sustainable, as well as being environmentally friendly, 2) Maintaining the highest level of performance to provide added value to stakeholders, 3) Attracting and developing talent and running an agile and agile organization. adaptive. PLTU Pacitan is a steam power generation unit located in Sukorejo Village, Sudimoro District, Pacitan Regency, East Java with a capacity of 315 MW. PLTU Tanjung Awar-Awar is a steam power generation unit located in Wadung Village, Jenu District, Tuban Regency, East Java with a capacity of 700 MW. PLTU Paiton is a steam power generation unit located in Binor Village, Paito District, Probolinggo Regency, East Java with a capacity of 815 MW and has been named the largest PLTU in Indonesia.

From the validity test, it can be seen that the correlation level shows a value with a significance level of <0.05, meaning that the data collection instrument in the form of a questionnaire can be said to be valid. From the reliability test, it can be seen that the Croncbach alpha value > 0.60, meaning that the data collection instrument in the form of a questionnaire can be said to be reliable. From the classical assumption test, it can be seen that the residual results are normally distributed, there are no symptoms of variable multicollinearity in the regression modal and the distribution of the existing data does not form a certain pattern which indicates that there is no heteroscedasticity.

Table 2. Model Summary

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	,813[a]	,661	,627	1,40170

Note: Predictors: (Constant), CT
Source: Author Analysis (2022)

Table 3. Hypothesis Test

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	35,420	2,616		13,538	,000
	CT	-,511	,116	-,813	-4,418	,001

Source: Author Analysis (2022)

Based on data processing through SPSS software, Table 2 show the model summary. Then, Table 3 define the effect of independent variable to dependent variable. The Value a is constant number of unstandardized coefficients. From data processing, it is known that the value of a is 35,420. This means that if there is no carbon tax (X) then the value of taxpayer readiness is 35,420. Value b is number of regression coefficients. From data processing, it is known that the value of b is -0.511. This means that every 1% application of the carbon tax rate (X), then the readiness of taxpayers increases by -0.511. The t-count value is -4.418, which means that there is a negative influence from the implementation of the carbon tax policy on taxpayer readiness. The value of R square is 0.661, which means that the effect of implementing the carbon tax policy (X) on taxpayer readiness (Y) is 66.1% and 33.9% taxpayer readiness is influenced by variables not examined in the study.

Hypothesis testing is done by comparing the significance value with the probability standard. From data processing, it is known that the significance value is 0.001 <0.05 standard probability. So, from the hypothesis that has been formulated, H0 is rejected, and Ha is accepted. This shows that there is an effect of implementing the carbon tax policy (X) on the readiness of taxpayers (Y).Based on simple linear regression analysis, in examining how much of the independent variable is the influence of the implementation of carbon tax policy on the dependent variable, namely the readiness of taxpayers, it shows that the test carried out produces a t-count value of -4.418 (negative value) while the significance value is 0.001 (positive value). Therefore, a negative influence was found between the variables in the study. Thus, it can be concluded that the Tax Base (DPP) for Carbon Tax is the amount of carbon emissions produced from goods containing carbon and/or from certain activities that produce carbon emissions. For this reason, the estimated number of emissions produced from these goods or activities will be measured and determined by other Ministries that have the authority and competence in determining the number of emissions generated from these goods and activities. Article 13 paragraph 10 of the HPP Law states that the DPP from this carbon tax will be determined by a Minister of Finance Regulation (PMK) after consultation with the House of Representatives (DPR).

CONCLUSION

Based on the discussion in the study, it can be concluded that the implementation of the carbon tax policy has a negative effect on taxpayer readiness with an effect of 66.1%. This reveals that with this negative influence, the non-implementation of the carbon tax policy will have an effect on increasing taxpayer readiness. There are limitations in this study that can be taken into consideration for future researchers.

The limitation is that there is still a lack of research objects used by researchers in research, so that it does not represent a picture of the readiness of taxpayers in Indonesia in responding to the implementation of carbon tax policies. The research object used is only limited to three PLTUs in East Java, namely PLTU Pacitan, PLTU Tanjung Awar-Awar, and PLTU Paiton. In fact, there are many PLTUs in Indonesia whose readiness to respond to the policy also needs to be investigated. So with the results of the research, it is hoped that it can be used as material for evaluation and review by the government, whether the policies that have been implemented are judged to be in line with what is expected by taxpayers. So that the policies implemented by the government are guided by the values of justice.

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