

UAI JOURNAL OF ECONOMICS, BUSINESS AND MANAGEMENT

(UAJEBM)



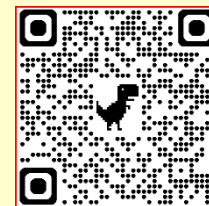
Abbreviated Key Title: UAI J Econ Bus Manag.

ISSN: 3049-2777 (Online)

Journal Homepage: <https://uaipublisher.com/>

Volume- 1 Issue- 4 (July-August) 2025

Frequency: Bimonthly



THE IMPACT OF CARBON TAX AND DECARBONIZATION ON CARBON TAX REVENUE IN INDONESIA

Hani Martiani^{1*}, Yanti², Trias Arimurti³

^{1,2,3} Accounting Study Program, Faculty of Economics and Business, Universitas Buana Perjuangan Karawang

Corresponding Author: Hani Martiani

Accounting Study Program, Faculty of Economics and Business, Universitas Buana Perjuangan Karawang

ABSTRACT

This study aims to analyze the impact of carbon tax and decarbonization on carbon tax revenue in Indonesia. The object of this research is basic materials sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021-2024 period. The approach used is quantitative with data analysis using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) version 3 method. A sample of 105 observation data was obtained through purposive sampling technique from a total population of 403 companies. The data used is secondary data sourced from sustainability reports and company annual reports. The results showed that carbon tax has a positive and significant effect on carbon tax revenue, which indicates that the application of carbon tax is effective as a source of tax revenue, and decarbonization has no significant effect on carbon tax revenue, because reducing emissions has not had a direct impact on tax revenue in the observation period. This study concludes that carbon tax policy optimization needs to be continued. The government is also advised to design a fiscal strategy that is integrated with decarbonization efforts in order to achieve a balance between economic growth and environmental sustainability.

KEY WORDS: Carbon Tax, Decarbonization, Carbon Tax Revenue

INTRODUCTION

The issue of climate change is getting more attention both globally and locally, the main trigger of climate change is global warming that comes from fossil energy-intensive activities that have the potential to increase emissions (Noviani & Ahmad, 2023). The more emissions released into the atmosphere, the higher the heat energy trapped and transmitted to the earth, thus triggering a gradual increase in global temperature (Meila et al., 2024). The rate of increase in average air temperature in Indonesia nationally reaches 0.6°C every 30 years and the rate of change in annual rainfall

nationally in Indonesia is increasing with the highest increase of 2784 mm/30 years (BMKG, 2024). As a result of climate change, the global economy is predicted to decline, including the economy in Indonesia, potentially by 3.45% by 2030 (Vinash, 2022). If there is no further action to stop climate change, future generations will bear the cost of enormous externalities (Rahma et al., 2025). Carbon emission reduction or decarbonization is essential to achieve better environmental quality and meet international commitments (Rahman et al., 2022). As a developing country, Indonesia faces a major

challenge in balancing economic growth with carbon emission control (Anugrah, 2023). Decarbonization strategies that focus on the production side have an impact on reducing emissions, potentially reducing the conventional tax base (Thomsen et al., 2025). The government, together with all stakeholders, needs to take immediate precautions so that the surge in emissions can be controlled as early as possible. (Lumbanraja & Lumbanraja, 2023). In this case, the application of carbon tax is an effective policy to achieve commitments in reducing emissions, and carbon tax can also act as an instrument to increase state revenue (Rahman et al., 2022). In addition, decarbonization is expected to play a role in accommodating economic growth (IESR, 2025).

Carbon tax is one of Indonesia's main efforts in realizing its net zero emission target. In accordance with the 2015 Paris Agreement, the Indonesian government is committed to reducing greenhouse gas emissions by 29% by 2030. The government enacted Law No. 7 of 2021 on Harmonization of Tax Regulations (HPP Law) as the legal basis for implementing the carbon tax policy (Arifin & Siagian, 2024). Carbon tax is an economic and environmental policy instrument that aims to reduce greenhouse gas emissions while encouraging conservation towards cleaner and low-carbon production methods (Cao et al., 2024). The levy is not only aimed at improving environmental performance, but also plays a role in generating state revenue and reducing environmental costs, taking into account current, future and expected costs (Umaini et al., 2024). Effective and wise implementation of a carbon tax can support the transition to a sustainable economy (Cahyaputra et al., 2024). In addition, the right timing and careful design of the carbon tax policy structure play a crucial role in reducing carbon emissions while increasing state revenue from the tax sector (Olpah et al., 2023).

Decarbonization is a process that aims to reduce the amount of carbon emissions captured by the atmosphere (Rahman et al., 2022). To improve environmental quality, companies must devise and implement innovative strategies by adopting decarbonization practices that help transition to sustainability (Linton et al., 2020). To decarbonize, company operations must rely on new technologies and renewable resources (Di Vaio et al., 2024). The management and utilization of energy resources can have an economic impact on improving the country's economy and meeting the needs of society (Setiawan et al., 2024).

Tax revenue is the main source of state revenue and serves as a regulatory tool to support the environment and ecosystems (Margono et al., 2022). The government still makes tax revenue the main source in the state revenue structure, given its strategic role in maintaining fiscal stability and supporting national development (Umaini et al., 2021). In addition, stable tax revenue can be used to increase investment in a sustainable economy and build green infrastructure (Ristiyana et al., 2024). Thus, tax revenues help economic development as well as reduce the impact of climate change and lead to a more sustainable economic system (Vientiany et al., 2024).

Previous research on the impact of carbon tax and decarbonization on state revenue has been conducted with mixed results. (Nurchaya et al., 2024) stated that carbon tax has a significant effect on state revenue. In line with that, (Hanafi et al., 2024) revealed that carbon tax contributes to increasing state revenue while encouraging the transition to clean energy. (Arifin & Siagian, 2024) also emphasized that carbon tax can affect revenue because it is basically able to provide fiscal incentives for the state. However, there are also studies that show different results. (Matondang et al., 2024) stated that carbon tax has no effect on state revenue because its

effectiveness is more dominant as an instrument to control externalities. Similarly, (Streicher et al., 2025) found that the establishment of a national carbon tax actually caused a slight decrease in local taxes.

Research on the effect of decarbonization on state revenue shows mixed findings. (Renata et al., 2024) stated that reducing carbon emissions affects state revenue. Similarly, (Rahman et al., 2022) found that emission reductions create fiscal potential and encourage investment in low-carbon manufacturing sectors. (Pratama et al., 2022) also confirmed that decarbonization affects state revenue because fossil energy savings can reduce potential state revenue by tens of trillions of rupiah. (Chaichaloempreecha et al., 2024) also in their research showed that decarbonization has a significant but negative effect on state revenue. In contrast, (Yudiantono et al., 2023) argue that decarbonization has no significant effect on state revenue, because more promising fiscal contributions come from fiscal efficiency that supports revenue optimization. Meanwhile, (Gyimah et al., 2023) show that decarbonization has no significant effect on economic growth, which can also indirectly affect state revenue.

Research on the effect of carbon tax and decarbonization on tax revenue has been conducted extensively, but research that discusses the impact of carbon and decarbonization on carbon tax revenue in Indonesia is still very limited, so this study focuses on the relationship between carbon tax and decarbonization with state revenue from carbon tax. The novelty in this study is the decarbonization variable that links decarbonization with carbon tax revenue. This study aims to analyze the impact of carbon tax and decarbonization level on carbon tax revenue as part of Indonesia's green fiscal policy.

Based on the background and description above, the research questions in this study are as follows:

RQ1:What is the impact of carbon tax on carbon tax revenue Indonesia?

RQ2:What is the impact of decarbonization on carbon tax revenue in Indonesia?

METHODS

This study uses a quantitative approach with carbon tax and decarbonization variables as independent variables, and carbon tax revenue as the dependent variable. The object and population of this study are basic materials sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2021 to 2024 with a total of 403 companies. Based on the results of data selection collected through the purposive sampling method during this period, 105 observation data units were obtained from companies that met the research criteria. The data used is secondary data obtained through literature studies from sustainability reports and annual reports of basic materials sector companies listed on the Indonesia Stock Exchange. The data that has been collected is then analyzed using SEM-PLS. The analysis includes outer model test, inner model test, and hypothesis testing.

RESULT

Descriptive Statistics

Descriptive statistical analysis is carried out to provide an overview of the characteristics of the sample data. This test is useful in explaining each variable used in the study so that the pattern and trend of the data can be known. The descriptive statistics used in this analysis include the mean, minimum value, maximum value, and standard deviation. The results of these descriptive statistics can be

seen in the following description:

Table 1. Descriptive statistics results

	Mean	Min	Max	Standar Deviation
Carbon Tax	1.099.858	44	26.634.394	3.781.648
Decarbonization	662.899	10	58.313.374	5.666.452
Carbon Tax Revenue	52.882.712.402	6.840.000	1.941.019.830.000	221.192.860.119

Source: Processed by SEM PLS (2025)

Based on the results of the descriptive analysis shown in table 1, the average emissions subject to carbon tax is 1.099.858 tons CO₂e, with a minimum value of 44 tons CO₂e generated by PT Optima Prima Metal Sinergi in 2023, and a maximum value of 26.634.394 tons CO₂e generated by PT Semen Indonesia in 2021. The standard deviation value of 3.781.648 tons CO₂e indicates a high variation in the amount of emissions between entities.

The decarbonization variable shows an average emission reduction of 662.899 tons CO₂e, with a minimum value of 10 tons CO₂e recorded by PT Colorpak Indonesia in 2023, and a maximum value of 58.313.374 tons CO₂e owned by PT Indah Kiat Pulp & Paper in 2024. The high standard deviation of 5.666.452 tons CO₂e reflects the variation in emission reduction efforts between entities, with most entities still having a low contribution to decarbonization.

The carbon tax revenue variable with the average value recorded is Rp52.882.712.402 with a minimum value of Rp6.842.000 published by PT Alakasa Industrindo in 2022, and the maximum value reaching Rp1.941.019.830.000 published by PT Indah Kiat Pulp & Paper in 2024. The very large standard deviation value of Rp221.192.860.119 indicates that there is a very large accumulation in tax revenue between entities or periods observed.

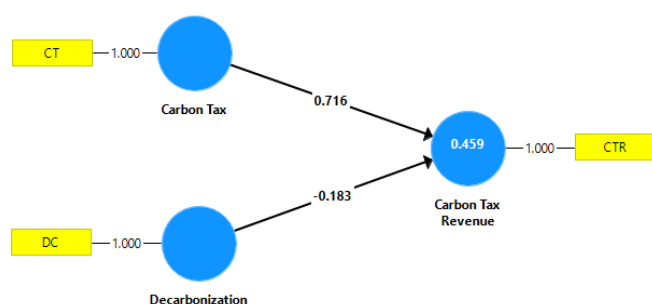
Outer Model Test (Measurement Model)

The outer model test is carried out to assess the extent to which the indicators in each variable block are able to consistently represent the construct being measured, so that the results can be used as a basis for analyzing and concluding the influence between variables in the research model (Suryana et al., 2024). Outer model testing is carried out in the following stages:

Covergent Validity Test

Convergent Validity test aims to ensure that each indicator in a variable has a strong relationship or shows a positive correlation with the construct it measures. An indicator is declared valid if it has a loading factor value of more than 0.70 (Mariawati et al., 2024).

Figure 1. Convergent Validity Test Results



The results in Figure 1 show the results that all indicators on the

research variables have a correlation value of 1.000 > 0.70, meaning that the convergent validity standard is met so that each indicator is said to be valid.

Discriminant validity (Average variance extracted (AVE))

The discriminant validity test using the Average Variance Extracted (AVE) metric is used to assess the extent to which the indicators in one variable are able to adequately explain the construct.

Table 2. Average Variance Extracted Test Results

Variabel	Average Variance Extracted (AVE)
Carbon Tax	1,000
Decarbonization	1,000
Carbon Tax Revenue	1,000

Source: Processed by SEM PLS (2025)

The results in table 2 show that the carbon tax variable has an AVE value of 1.000, the decarbonization variable is 1.000, and the carbon tax revenue variable is 1.000. The AVE on all variables exceeds the threshold value of 0.50 so that all variables in the AVE test correlation results are declared valid.

Composite Reliability And Cronbach's Alpha Test

Reliability tests were carried out using composite reliability and Cronbach's alpha metrics to assess the internal consistency of a construct based on its constituent indicators. A construct is declared reliable if the composite reliability and Cronbach's alpha values exceed the 0.70 threshold (Suryana et al., 2024).

Table 3. Composite Reliability and Cronbach's Alpha Test Results

Variabel	Cronbach's Alpha	Composite Reliability
Carbon Tax	1,000	1,000
Decarbonization	1,000	1,000
Carbon Tax Revenue	1,000	1,000

Source: Processed by SEM PLS (2025)

The results in table 3 show that the variable Cronbach's alpha value on the carbon tax variable is 1.000, the decarbonization variable is 1.000, and the carbon tax revenue variable is 1.000. The Cronbach's alpha value on each variable exceeds the threshold value of 0.70 so that all variables are said to be reliable.

Furthermore, the composite reliability value on the carbon tax variable is 1.000, the decarbonization variable is 1.000, and the carbon tax revenue variable is 1.000. The composite reliability value on each variable exceeds the threshold value of 0.70 so that all variables are said to be reliable.

Inner Model (Structural Model)

The structural model test is the next step after the measurement model is said to be valid and reliable. Testing of the structural model is done through the results of the r-square test. The results of the structural model testing are as follows:

R Square

The r-square test is used to measure the extent to which the independent latent variable is able to explain the dependent latent variable in a model. This value provides an overview of the strength of the relationship between variables by looking at the r-square value which is a goodness-fit model test. A value close to one indicates that the independent variables are almost completely able

to explain the variation that occurs in the dependent variable (Ghozali, 2021).

Table 4. R-Square Test Results

	<i>R Square</i>
Carbon Tax Revenue	0,459

Source: Processed by SEM PLS (2025)

The results in table 4 show that the r square value of the carbon tax revenue variable is 0.459, indicating that carbon tax and decarbonization contribute to explaining about 45.9% of the variation in carbon tax revenue. This means that almost half of the carbon tax revenue is influenced by these two variables. Meanwhile, the remaining 54.1% is influenced by other factors not discussed in this study.

Hypothesis Test

Testing to determine the effect of independent variables on the dependent variable is done by looking at the t-statistics value and the probability value (P-Values). In this study, hypothesis testing uses a 5% significance level, so the t-statistic value used as a reference limit is 1.96. The hypothesis is accepted if $t\text{-statistics} > 1.96$ or $P\text{-Values} < 0.05$ (Suryana et al., 2024). Hypothesis testing is presented in the following path coefficients table:

Path Coefficient

Table 5. Path Coefficient Test Results

Variabel	<i>Original Sample</i>	<i>Sample Mean</i>	<i>Standard Deviation</i>	<i>T Statistics</i>	<i>P Values</i>
Carbon Tax On Carbon Tax Revenue	0,716	0,810	0,152	4,701	0,000
Decarbonization On Carbon Tax Revenue	-0,183	-0,139	0,136	1,345	0,179

Source: Processed by SEM PLS (2025)

From the results of path coefficient testing, it explains how much direct relationship each variable has as follows:

1. The relationship between carbon tax variable and carbon tax revenue variable is $0.000 < 0.05$ from the results of P Values, it can be stated that carbon tax has a positive and significant effect on carbon tax revenue.
2. The relationship between the decarbonization variable and the carbon tax revenue variable is $0.179 > 0.05$ from the results of P Values, it can be stated that decarbonization has no effect on carbon tax revenue.

DISCUSSION

Effect of Carbon Tax on Carbon Tax Revenue

Based on the analysis, it shows that carbon tax has a positive and significant effect on carbon tax revenue. This means that the implementation of carbon tax can significantly increase tax revenue from the carbon tax sector. This finding is in line with the results of research by (Meila et al., 2024) which explains that the potential tax revenue from the carbon sector is very large if this policy is fully implemented, in the full implementation scenario, the carbon tax is estimated to generate revenue of Rp23.28 trillion. The magnitude of this fiscal contribution reflects that carbon tax is not just an emission control instrument, but also a fiscal strategy to support state revenue (Pratama et al., 2022). (Maghfirani et al., 2022) suggested that carbon tax has the potential as an additional source of state revenue

in addition to functioning as a tool to internalize external costs due to pollution. By adding costs to carbon-based activities, carbon taxes have a dual function of regulating non-renewable energy consumption patterns and increasing state revenues (Rahmasari et al., 2024). Thus, the carbon tax policy can be said to be fiscally successful because it has a direct impact on increasing state revenue from carbon taxes.

Effect of Decarbonization on Carbon Tax Revenue

Based on the results of the analysis, decarbonization does not have effect on carbon tax revenues, indicating that in the period and scope of the study conducted, decarbonization efforts have not had a real impact on the amount of carbon tax revenues. This phenomenon can be explained by the fact that decarbonization aims to reduce emissions, so entities that succeed in significantly reducing their carbon emissions will avoid or pay less carbon tax (Rahman et al., 2022). This means that successful decarbonization can actually reduce the tax base in the long run. Thus, it is not surprising that increased decarbonization activities have not had a significant effect on carbon tax revenues in this observation period. This finding is also supported by a study from (Nugroho et al., 2023) which states that decarbonization in Indonesia still faces many challenges in the implementation stage, one of which is high dependence on fossil energy, limited clean energy technology, and low investment in the renewable energy sector. According to (Fauzy, 2023) structural challenges such as financing, infrastructure, and technological readiness are still obstacles in accelerating the low-carbon energy transition. To address the impacts of climate change, an active and significant role from the government is required. One of the steps that can be taken is through the implementation of a carbon tax, which, despite its potential, has yet to be fully implemented in Indonesia. Without fiscal policy support such as a carbon tax, decarbonization efforts risk being slow and less economically effective (Pusparini et al., 2023). Thus, while decarbonization is strategically important for the environment, in terms of carbon tax revenue it is currently not statistically or fiscally significant.

CONCLUSION AND SUGGESTIONS

Based on the test results, it can be concluded that carbon tax has a significant effect on carbon tax revenue. This means that the more optimal carbon tax sourced from carbon emissions is implemented in Indonesia, the more carbon tax revenue from the basic materials sector increases. Meanwhile, decarbonization has no effect on carbon tax revenue. This means that the greater the carbon emission reduction efforts made by companies in the basic materials sector, the lower the carbon tax revenue.

The government should continue to optimize carbon tax as a tool to increase state revenue and promote environmental benefits. As efforts to reduce carbon emissions increase, the Indonesian government should create a long-term plan to maintain fiscal sustainability. This can be achieved by broadening the environmental tax base or by incentivizing industries that use technologies that reduce emissions. Further research can provide a broader picture of the relationship between carbon tax, decarbonization, and carbon tax revenue in Indonesia, it is recommended to expand additional relevant variables such as carbon trading or environmental taxes.

BIBLIOGRAPHY

1. Anugrah, N. (2023). *PPID Kementerian Lingkungan Hidup dan Kehutanan Hasil Kajian World Bank Tunjukkan Indonesia Dapat Selaraskan Aksi Iklim dan Pembangunan*

- Nasional*. Kementerian Lingkungan Hidup Dan Kehutanan. <https://ppid.menlhk.go.id/berita/siaran-pers/7148/hasil-kajian-world-bank-tunjukkan-indonesia-dapat-selaraskan-aksi-iklim-dan-pembangunan-nasional>
2. Arifin, A. H., & Siagian, A. W. (2024). Quo Vadis Ketahanan Iklim: Analisis Kebijakan Pajak Karbon Sebagai Pertambahan Pendapatan Indonesia. *Jurnal BPPK: Badan Pendidikan Dan Pelatihan Keuangan*, 17(1), 52–69. <https://doi.org/10.48108/jurnalbppk.v17i1.764>
 3. BMKG. (2024). *Analisis Laju Perubahan Curah Hujan Tahunan*. Badan Meteorologi Klimatologi Dan Geofisika. <https://www.bmkg.go.id/iklim/?p=analisis-laju-perubahan-curah-hujan>
 4. Cahyaputra, V. A., Mukhlis, R. A., Elizabeth, I., & Sihalo, E. D. (2024). Dampak Penerapan Net Zero Emission Terhadap Pertumbuhan Fiskal Indonesia. *Jurnal Cita Ekonomika*, 18(2), 86–98. <https://doi.org/10.51125/citaekonomika.v18i2.13046>
 5. Cao, L., Toyohara, A., Li, Y., & Zhou, W. (2024). Willingness to pay for carbon tax in Japan. *Sustainable Production and Consumption*, 52, 427–444. <https://doi.org/https://doi.org/10.1016/j.spc.2024.11.004>
 6. Chaichaloempreecha, A., Pradhan, B. B., Rajbhandari, S., Chunark, P., Fujimori, S., Oshiro, K., Hanaoka, T., & Limmeechokchai, B. (2024). Macroeconomic impacts and co-benefits of deep-decarbonization in Thailand. *Ecology and Environment*, 9(5), 486–501. <https://doi.org/10.1007/s40974-024-00324-w>
 7. Di Vaio, A., Zaffar, A., & Chhabra, M. (2024). Intellectual capital through decarbonization for achieving Sustainable Development Goal 8: a systematic literature review and future research directions. *Journal of Intellectual Capital*, 25(7), 54–86. <https://doi.org/10.1108/JIC-05-2024-0131>
 8. Fauzy, P. R. (2023). Peluang Dan Tantangan Transisi Energi: Implikasi Kebijakan Pasca Presidensi G20 Indonesia. *TAXPEDIA: Journal of Tax Policy, Economic and Accounting*, 1. <https://doi.org/https://doi.org/10.61261/muctj.v1i1.14>
 9. Ghozali, I. (2021). *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 26* (10th ed.). Bada Penerbit Universitas Diponegoro.
 10. Gyimah, J., Fiati, M. K., Nwigwe, U. A., Vanessa, A. E., & Yao, X. (2023). Exploring the impact of renewable energy on economic growth and carbon emissions: Evidence from partial least squares structural equation modeling. *PLOS ONE*, 18(12), e0295563. <https://doi.org/10.1371/journal.pone.0295563>
 11. Hanafi, N., A'ini, M. N., Diana, R. S. N., Prabowo, W. A., Rohmadi, A., & Fitrianto, M. R. (2024). Studi Komparasi Penerimaan Pajak Karbon Antara Indonesia Dan Singapura Sebagai Instrumen Penting Mewujudkan SDGS. *Jurnal Nova Idea*, 1(2), 126–135. https://doi.org/https://doi.org/10.14710/nova_idea.47997
 12. IESR, I. for E. S. R. (2025). *Dekarbonisasi Industri Dapat Mendorong Pertumbuhan Ekonomi 8 Persen - IESR*. <https://iesr.or.id/dekarbonisasi-industri-dapat-mendorong-pertumbuhan-ekonomi-8-persen/>
 13. Linton, S., Clarke, A., & Tozer, L. (2020). Strategies and Governance for Implementing Deep Decarbonization Plans at the Local Level. *Sustainability*, 13, 154. <https://doi.org/10.3390/su13010154>
 14. Lumbanraja, P. C., & Lumbanraja, P. L. (2023). Analisis Variabel Ekonomi Hijau (Green Economy Variable) Terhadap Pendapatan Indonesia (Tahun 2011-2020) dengan Metode SEM-PLS. *Cendekia Niaga*, 7(1), 61–73. <https://doi.org/10.52391/jcn.v7i1.836>
 15. Maghfirani, H. N., Hanum, N., & Amani, R. D. (2022). Analisis Tantangan Penerapan Pajak Karbon Di Indonesia. *Juremi: Jurnal Riset Ekonomi*, 1(4), 314–321. <https://doi.org/https://doi.org/10.53625/juremi.v1i4.746>
 16. Margono, M., Sudarmanto, K., Sulistiyani, D., & Sihotang, A. P. (2022). Keabsahan Pengenaan Pajak Karbon Dalam Peraturan Perpajakan. *Jurnal Usm Law Review*, 5(2), 767. <https://doi.org/10.26623/julr.v5i2.5918>
 17. Mariawati, Mulyadi, D., & Yanti. (2024). Pengaruh Green Innovation Dan Keberlangsungan Usaha Terhadap Kinerja Keuangan UMKM Pabrik Tahu dan Tempe Di Kabupaten Karawang. *SEIKO: Journal of Management & Business*, 7(1), 1451–1463.
 18. Matondang, K. A., Andriani, C., Sagala, D. N., & Paska, I. (2024). Efektivitas Pajak Sebagai Alat Pengendalian Eksternalitas Dalam Sistem Perpajakan Di Indonesia: Sebuah Studi Literatur. *INNOVATIVE: Journal Of Social Science Research Volume*, 4, 4230–4248. <https://j-innovative.org/index.php/Innovative%0AEfektivitas>
 19. Meila, K. D., Dianty, A., & Veronica, L. (2024). Penerapan Pajak Karbon dalam Mewujudkan Sustainability Development Goals Serta Dampaknya Terhadap Penerimaan Pajak di Indonesia. *Owner*, 8(2), 1849–1864. <https://doi.org/10.33395/owner.v8i2.2001>
 20. Noviani, E., & Ahmad, K. (2023). Pengaruh Pendanaan Iklim terhadap Penurunan Emisi Karbon melalui Energi Terbarukan di Indonesia. *Jurnal Ekonomi Dan Pembangunan Indonesia*, 23(2), 183–194. <https://doi.org/10.21002/jepi.2023.12>
 21. Nugroho, A. D., Alim, M. S., Sundari, S., Soekarno, G. R., Pertahanan, U., & Indonesia, R. (2023). Kebijakan Dekarbonisasi Sistem Energi Indonesia pada Sektor Energi Terbarukan. *Cakrawala: Jurnal Litbang Kebijakan*, 17, 109–125. <https://doi.org/https://doi.org/10.32781/cakrawala.v17i2.539>
 22. Nurcahya, W. F., Afandi, M., Faturrochman, M., & Yaasiin, T. H. (2024). Analysis Of The Impact Of Carbon Tax And Green Property Tax On Jakarta's Local Revenue. *Educoretax*, 4(6), 787–799. <https://doi.org/10.54957/educoretax.v4i6.891>
 23. Olpah, H., Ambarwati, Suwandi, Bachtiar, W., & Ananda, L. (2023). The Implementation Of Carbon Tax In Indonesia: Regulations, Challenges, And Its Impacts. *Jurnal RAK (Riset Akuntansi Keuangan)*, 8, 180–193. <https://doi.org/10.31002/rak.v8i2.1142>
 24. Pratama, B. A., Ramadhani, M. A., Lubis, P. M., & Firmansyah, A. (2022). Implementasi Pajak Karbon Di Indonesia: Potensi Penerimaan Negara Dan Penurunan Jumlah Emisi Karbon. *JURNAL PAJAK INDONESIA (Indonesian Tax Review)*, 6(2), 368–374. <https://doi.org/10.31092/jpi.v6i2.1827>
 25. Pusparini, P. D., Widiana, I. G., Pharresia, S. Z., & Fawlung, M. H. (2023). Analisis Penerapan Pajak Karbon Dan Ulez Terhadap Penurunan Emisi Karbon Di Indonesia. *Jurnal Pajak Indonesia*, 7(1), 57–66.
 26. Rahma, L., Hartono, D., & Hastuti, S. H. (2025). Carbon-tax implementation in Indonesia: a social accounting

- matrix analysis. *Sustainability: Science, Practice and Policy*, 21(1), 2454061. <https://doi.org/10.1080/15487733.2025.2454061>
27. Rahman, F., Sayogo, E., Husnah, F., & Maharani, G. S. (2022). *Optimalisasi Pendapatan Negara : Strategi Dekarbonisasi melalui Kebijakan Pajak Karbon untuk Keberlangsungan Industri Manufaktur Indonesia*.
 28. Rahmasari, D., Iskandar, S. A., & Prasetya, R. D. (2024). Carbon Tax Study As A Social Engineering Tool in Realizing The Agenda of Sustainable Development Goals (SDGs) in Indonesia. *Ikatan Penulis Mahasiswa Hukum Indonesia Law Journal*, 4(1), 147–165. <https://doi.org/10.15294/ipmhi.v4i1.71582>
 29. Renata, E., Laoli, P. E., & Paranduk, M. M. (2024). *Preseden Hijau : Strategi Cerdas Penerapan Pajak*. 4(1), 53–65. <https://senapan.upnjatim.ac.id/index.php/senapan/article/view/969>
 30. Ristiyana, R., K., A. S., Akadiati, V. A. P., Lukwardani, D. H., Wulaningsih, R. W., Fachrudin, M., Sari, S. N., & Suwandi. (2024). *Kebijakan Pajak Dan Pembangunan Ekonomi Strategi Pertumbuhan Keberlanjutan* (A. Hamida Hasan, S.E., M.Si. & C. Suwandi, M.Ak. (eds.); 2024th ed.). CV.EUREKA MEDIA AKSARA.
 31. Setiawan, E. B., Koeswahyono, I., & Qurbani, I. D. (2024). Untuk Transisi Energi Berkelanjutan (The Right ' S State To Control Of Renewable Energy For Sustainable Energy Transition). *Majalah Hukum Nasional*, 54(30).
 32. Streicher, G., Kettner, C., & Schratzenstaller, M. (2025). Analysis of the Regional Impacts of the Austrian Carbon Price. In *collage of aniaml science and technology, northwest A&F University, yangling, china* (pp. 1–4). <https://doi.org/10.2139/ssrn.5116990>
 33. Suryana, Yanti, & Arimurti, T. (2024). Pengaruh Penggunaan Informasi Akuntansi Manajemen, Pengetahuan Akuntansi Dan Kepribadian Berwirausaha Terhadap Kinerja Keuanagan Umkm Di Kabupaten Karawang. *JPEKBM (Jurnal Pendidikan Ekonomi, Kewirausahaan, Bisnis Dan Manajemen)*, 8(1), 16–30. <https://doi.org/10.32682/ng440474>
 34. Thomsen, S. F., Raza, H., & Byrialsen, M. R. (2025). An assessment of carbon taxation policies: The case of Denmark. *Ecological Economics*, 238, 108741. <https://doi.org/https://doi.org/10.1016/j.ecolecon.2025.108741>
 35. Umaini, N. F., Arimurti, T., Yanti, Y., & Sasqia, U. (2021). Pengaruh Penerapan Sistem e-Filling Dengan Pemahaman Internet Terhadap Kepatuhan Wajib Pajak Sebagai Variabel Moderasi Di KPP Pratama Karawang Utara. *Widya Akuntansi Dan Keuangan*, 3(2), 200–214.
 36. Umaini, N. F., Sihabudin, S., & Arimurti, T. (2024). Penerapan Akuntansi Lingkungan Dalam Pengelolaan Limbah: Studi Pada Pencucian Mobil. *Jurnal Riset Akuntansi Politala*, 7(2), 499–507. <https://doi.org/10.34128/jra.v7i2.406>
 37. Vientiany, D., Alyanisa, F., Kania, S. S., & Ritonga, S. Z. (2024). Dimensi Ekonomi Dalam Implikasi Perpajakan Di Indonesia. *Jurnal Ilmiah Ekonomi Dan Manajemen (Jiem)*, 2(7), 199–211. <https://doi.org/https://doi.org/10.61722/jiem.v2i7.1867>
 38. Vinash. (2022). Efek Perubahan Iklim, Indonesia Bisa Rugi Rp112T. In *Pajakku*. <https://www.pajakku.com/read/632d28c5fa33631a29e38d2b/Efek-Perubahan-Iklim-Indonesia-Bisa-Rugi-Rp112T>
 39. Yudiantono, Y., Jaka, W., & Adiarso, A. (2023). Dekarbonisasi Sektor Ketenagalistrikan Sampai 2050 Dalam Kerangka Kebijakan Energi Nasional. *Jurnal Energi Baru Dan Terbarukan*, 4(2), 66–82. <https://doi.org/10.14710/jebt.2023.16966>