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The Influence of Capital Intensity, Firm Size, and Firm Age on Tax Aggressiveness in Energy Sector Companies Listed on the Indonesia Stock Exchange in 2021-2023

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A R T I C L E I N F O

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A B S T R A C T

This study seeks to empirically examine the relationship between capital intensity, firm size, and firm age, and their impact on tax aggressiveness within energy sector companies listed on the Indonesia Stock Exchange from 2021 to 2023. The research follows a quantitative approach utilizing secondary data, drawing from a sample of 41 companies out of a total of 83. Data analysis was performed using multiple linear regression techniques with IBM SPSS 27 software. The findings reveal that capital intensity has a significant positive effect on tax aggressiveness, while firm size exhibits a significant negative effect. Additionally, firm age showed no discernible impact on tax aggressiveness. The results of the simultaneous study showed that capital intensity, firm size, and firm age had a significant effect on tax aggressiveness.

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INTRODUCTION

As a developing country that is experiencing rapid economic progress, Indonesia is committed to improving the welfare of its people through equitable and sustainable development. One of the main pillars in driving development is strengthening strategic sectors, including the energy sector, which is an important pillar in supporting the national economy. In the 2020-2024 National Medium-Term Development Plan (RPJMN), the government targets economic growth of 5.7-6.0 percent each year. National development requires large funding, most of which comes from the State Budget. Based on Law Number 19 of 2023 concerning the 2024 State Budget, state revenues consist of tax revenues, non-tax state revenues, and grants.

The Ministry of Finance noted that Indonesia's tax revenues experienced a positive increase from 2021 to 2023. In 2021, tax revenues were recorded at IDR1,547.8 trillion, reaching 107.15% of the target. In 2022, revenues increased to IDR1,716.8 trillion, reaching 115.6% of the target. In 2023, tax revenues reached IDR1,869.2 trillion or 108.8% of the APBN target and 102.8% of Presidential Regulation Number 75 of 2023. Based on these achievements, it can be seen that taxation plays an important role in the Indonesian economy, so the government continues to strive to increase domestic tax revenues (Republic of Indonesia, 2024)

Companies are established to obtain maximum profit, but taxes are often considered as a burden that reduces net profit, thus encouraging companies to engage in tax aggressiveness, namely efforts to minimize tax burdens through tax planning. The intensity of tax aggressiveness is typically evaluated through the Effective Tax Rate (ETR). A lower ETR suggests that a firm may be employing a strategy for avoiding taxes. This phenomenon occurs in various countries, such as the case of Facebook in the US which was accused by the IRS of moving profits to Ireland to lower taxes, and the case of PT Adaro Energy Tbk in Indonesia which is suspected of using transfer pricing practices through a subsidiary in Singapore. Practices like this are detrimental to the state because they reduce tax revenues that should be used for development.

Various factors impact the degree of corporate tax aggressiveness, including capital intensity, firm size, and firm age. Capital intensity pertains to a company's investment in fixed assets; generally, the greater the value of these assets, the larger the deductible depreciation expense, which in turn reduces tax liabilities. Research by Sugeng et al. (2020), Suyanto and Sofiyanti (2022), Syafrizal and Sugiyanto (2022), Mulya and Anggraeni (2022), Oktavia et al. (2023), and Aisyah et al. (2024) shows that capital intensity has an effect on tax aggressiveness, but this is different from the findings of Yahya et al. (2022), Fauzia et al. (2023), and Utami and Anggraeni (2024) who stated that it had no effect. Firm size is also considered to influence tax aggressiveness because large companies tend to have more resources to carry out tax planning. This is supported by research by Wulandari and Purnomo (2021), Mulya and Anggraeni (2022), Manurung et al. (2022), Oktavia et al. (2023), Ardhi and Lubis (2023), Rizkiawan (2023), Utami and Anggraeni (2024), and Widianingru et al. (2024), but was rejected by Sugeng et al. (2020), Firdausy (2022), Kurniawan (2022),

Hutasoit and Lubis (2023), Yahya et al. (2022), Azhar and Puspitasari (2023), and Fauzia et al. (2023). Meanwhile, firm age or company age, which reflects the company's experience and maturity in implementing tax strategies, also shows varying research results, such as research by Rizkiawan (2023) and Firdausy (2022) which stated that it had an effect, but differed from the findings of Kurniawan (2022), Hutasoit and Lubis (2023), and Azhar and Puspitasari (2023) which stated that it had no effect on tax aggressiveness.

Previous studies that have been described regarding tax aggressiveness with different variables, research methods, and time spans have produced varying results which prompted researchers to conduct a study entitled "The Effect of Capital Intensity, Firm Size, and Firm Age on Tax Aggressiveness in Energy Sector Companies Listed on the Indonesia Stock Exchange in 2021-2023".

LITERATURE REVIEW

Agency Theory

Agency Theory was first developed in 1976 by Jensen and Meckling which describes the relationship between principal and agent. The principal is a shareholder who grants authority and responsibility to the agent to manage the company's operations on their behalf. Meanwhile, the agent is tasked with overseeing these operations in alignment with the principal's interests. According to Brigham and Houston (2019:13), agency problems arise when there is a difference of interest between managers who have management authority and shareholders as owners of the company. This difference can encourage managers to focus more on personal interests, such as expanding the scale of the company to increase its influence or stability of its position, and maximizing shareholder welfare.

Stakeholder Theory

Stakeholder theory was first introduced by Edward R. Freeman in his book Strategic Management: A Stakeholder Approach in 1984. This theory states that companies are not only responsible to shareholders, but also to various parties who have interests (stakeholders) in the company's operations, such as employees, customers, suppliers, government, community, and the environment. According to Freeman quoted in Shaffira et al. (2022:58), stakeholder theory could be a hypothesis that clarifies the relationship between companies in carrying out their exercises with their partners (shareholders, leasers, society, customers, providers, examiners and other parties).

Accountancy

According to Weygandt, Kimmel and Kieso (2019:4) Accounting is a process that begins with identifying economic events that are relevant to a business, recording them to provide a history of these economic events, which consists of classifying and summarizing these economic events to then be communicated through financial reports.

Tax Accounting

According to Tomasowa (2023:2) tax accounting is an information system that provides accounting information based on applicable accounting standards and tax regulations as a basis for taxpayers to fulfill their tax obligations. Tax accounting emphasizes the basis for calculating tax obligations that must be paid as a basis for preparing notification letters and consideration of the consequences arising from a company's activities.

Tax

According to the Republic of Indonesia's Law Number 6 of 1983, which pertains to General Provisions and Tax Procedures and has undergone several amendments, the most recent being Law Number 6 of 2023, the definition of tax is outlined in Article 1, paragraph (1). It states that tax is a compulsory contribution owed to the state by individuals or entities. This obligation is mandated by law and is not accompanied by direct compensation. The revenue generated from taxes is intended to fulfill state needs and promote the greatest prosperity for the populace.

Tax Aggressiveness

Actions to engineer the amount of taxable profit or save on tax costs owed are a form of tax aggressiveness. Tax aggressiveness is an action that aims to engineer a company's taxable profit through tax planning, either using legal (tax avoidance) or illegal (tax evasion) methods (Oktavia et al., 2023:21). Tax aggressiveness in this study is measured by the Effective Tax Rate (ETR) scale. ETR measures the income tax burden shouldered by a company relative to its profit before tax. It serves as a negative proxy for tax aggressiveness: a high ETR suggests lower tax aggressiveness, while a low ETR indicates more aggressive tax strategies. Essentially, a lower ETR signifies that the company is more proactive in minimizing its tax expenses.

$$\text{ETR} = \frac{\text{Income Tax Expense}}{\text{Profit Before Tax}}$$

Capital Intensity

According to Kasmir (2017:184) capital intensity is the ratio between fixed assets to total assets where this ratio describes the amount of company assets invested in the form of fixed assets. Company investment in fixed assets will result in depreciation costs from the invested fixed assets. Managers can allocate the company's idle funds towards fixed assets to take advantage of depreciation costs. This strategy not only generates benefits but also allows for tax deductions, ultimately leading to a reduction in taxable income.

$$\textit{Capital Intensity} = \frac{\text{Total Fixed Assets}}{\text{Total Assets}}$$

Firm Size

According to Toni and Anggara (2021:13) company size is a scale used to measure the size of a company as seen from total assets, sales, and market capitalization. Company size is considered to be able to impact the esteem of the company since the bigger the measure or scale of the company, the less demanding it'll be for the company to get subsidizing sources, both inner and outside.

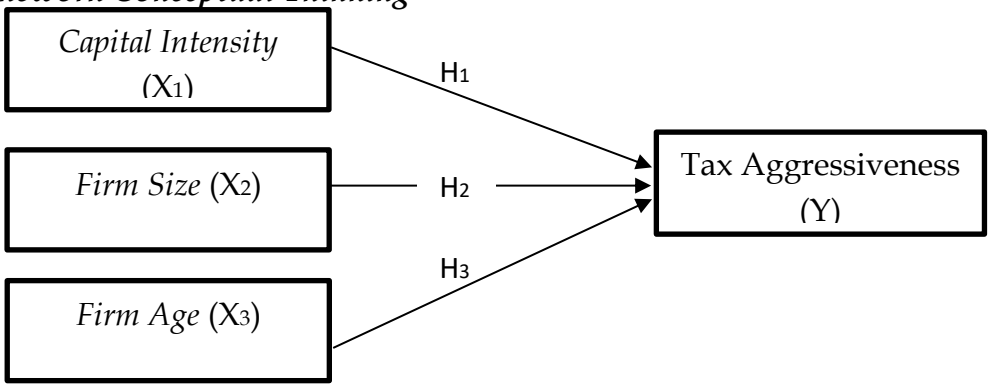
Firm Size = Ln (Total Assets)

Firm Age

According to Indrawati et al. (2024:4) firm age is the length of time a company has been established and remains listed on the IDX. Companies that have been established for a considerable length of time tend to excel in managing accounting information compared to their newer counterparts. Additionally, these seasoned companies are often more adept at overcoming challenges and maintaining stability, thanks to the wealth of experience they have accumulated over the years. Firm age can trigger tax aggressiveness because the longer a company carries out operational business activities, the company is considered to have experience in seeing tax avoidance opportunities (Azhar and Puspitasari, 2023:1957).

Firm Age = Research Year-Year Listed on IDX

Framework Conceptual Thinking



Source: Image processed by researchers, 2025

H1: *Capital intensity* has a significant positive effect on tax aggressiveness on company energy sector Which registered in Exchange Indonesia Effect

H2: *Firm size* has a significant positive effect on tax aggressiveness. in energy sector companies listed on the Indonesia Stock Exchange

H3: *Firm age* has a significant positive effect on tax aggressiveness. in energy sector companies listed on the Indonesia Stock Exchange

METHODOLOGY

Quantitative research methodology is used in this study, which is based on the positivism paradigm. According to Sugiyono (2022:8), quantitative research is a method employed to study a specific population or sample. It involves collecting data using various research instruments and analyzing this data through statistical or quantitative techniques. The primary goal of quantitative research is to test predefined hypotheses. This study seeks to explore the impact of capital intensity, firm size, and firm age on tax aggressiveness. The research focuses on energy sector companies listed on the IDX between 2021 and 2023, comprising a total of 83 firms. For the selection of the sample, the research utilized a non-random sampling method, specifically employing purposive techniques. It was found that a firm's size has a significant positive impact on its level of tax aggressiveness. This deliberate approach was guided by specific criteria defined by the researcher. The research was conducted from January to February 2025, concentrating on these IDX-listed energy sector companies. The data used in this study are secondary data, obtained through two data collection techniques, namely literature studies and documentation studies. Literature studies are conducted by reviewing books, scientific articles, journals, and other media relevant to the research topic. The documentation study was performed by retrieving the company's annual financial report from the official website of the IDX. To evaluate the hypothesis, this study employed multiple linear regression analysis, following a classical assumption test to ensure the regression model's validity. Data processing and analysis were conducted using IBM SPSS software, version 27.

RESEARCH RESULT

Descriptive Statistics

Table 1 Statistics Descriptive
***Capital Intensity , Firm Size , Firm Age* and Tax Aggressiveness**

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Capital Intensity	123	.02334	.91369	.3457124	.26156838
Firm Size	123	13.07	29.27	20.8941	3.76057
Firm Age	123	0	33	13.85	9.134
Tax Aggressiveness	123	.03851	.55017	.2238763	.10382518
Valid N (listwise)	123				

Source: Processed data from SPSS 27, 2025

Based on the data in table 1, the sample is 123 samples. Based on the data in table 1, it can be seen that the company's capital intensity variable has an average of 0.3457124, a minimum value of 0.02334, a maximum value of 0.91369 and a standard deviation value of 0.26156838. Based on the results, it can be explained that the minimum value of the company's capital intensity in the

energy sector for the period 2021-2023 is 0.02334 which is the value of the Radiant Utama Interinsco Tbk (RUIS) company, while the maximum value of capital intensity is in the Bintang Samudera Mandiri Lines Tbk (BSML) company of 0.91369. The standard deviation value of capital intensity is smaller than the average (mean) capital intensity value (0.26156838 <0.3457124) which indicates that the data variable is small and there is no large gap. This shows that the average (mean) value can represent the entire capital intensity variable data.

Based on the data in table 1, it can be seen that the company's firm size variable has an average of 20.8941, a minimum value of 13.07, a maximum value of 29.27 and a standard deviation value of 3.76057. According to the findings, the firm that possesses the largest firm size value is Sumber Global Energi Tbk (SGER) at 29.27, whereas the one with the smallest firm size value is Petrosea Tbk (PTRO) at 13.07. The standard deviation value of firm size is smaller than the average (mean) value of firm size (3.76057 <20.8941) which indicates that the data variable is small and there is no large gap. This shows that the average (mean) value can represent the entire firm size variable data.

Based on the data in table 1, it can be seen that the company's firm age variable has an average of 13.85, a minimum value of 0, a maximum value of 33, and a standard deviation value of 9.134. Based on the results, it can be explained that the company with the highest firm age value is Bumi Resources Tbk (BUMI) at 33, while the company with the lowest firm age value is Bintang Samudera Mandiri Lines Tbk (BSML), Prima Andalan Mandiri Tbk (MCOL), and RMK Energi Tbk (RMKE) at 0. The standard deviation value of firm age is smaller than the average (mean) value of firm age (9.134 <13.85) which indicates that the data variable is small and there is no large gap. This shows that the average (mean) value can represent the entire firm age variable data.

Based on the data in table 1, it can be seen that the variable of corporate tax aggressiveness has an average of 0.2238763 and a standard deviation value of 0.10382518. The minimum value owned by the company of 0.03851 is in the company Transcoal Pacific Tbk (TCPI) and the maximum value owned by the company of 0.55017 is in the company Medco Energi Internasional Tbk (MEDC). The standard deviation value of tax aggressiveness is smaller than the average value (mean) of tax aggressiveness (0.10382518 <0.2238763) which indicates that the data variable is small and there is no large gap. This shows that the average value (mean) can represent the entire data of the tax aggressiveness variable.

Classical Assumption Test

a. Normality Test

Table 2 Normality Test Results
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		123
Normal Parameters [a,b]	Mean	-.0018947
	Std. Deviation	.04252776
Most Extreme Differences	Absolute	.067
	Positive	.067
	Negative	- .041
Test Statistics		.067
Asymp. Sig. (2- tailed)		.200 [d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Source: Processed data from SPSS 27, 2025

The results presented in table 2 indicate that the Asymp. Sig (2-tailed) value is 0.200. Since this figure exceeds the 0. 05 threshold, we can conclude that the data in this study follows a normal distribution.

b. Multicollinearity Test

Table 3 Results Test Multicollinearity

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Capital Intensity	.743	1,346
Firm Size	.937	1,068
Firm Age	.717	1,394

a. Dependent Variables: Tax Aggressiveness

Source: Processed data from SPSS 27, 2025

The results of the multicollinearity test presented in table 3 indicate that the tolerance values for the independent variables are as follows: capital intensity at 0. 743, firm size at 0. 937, and firm age at 0. 717. Additionally, the corresponding Variance Inflation Factor (VIF) values are 1. 346 for capital intensity, 1. 068 for firm size, and 1.394 for firm age. These findings suggest that the regression model

is free from multicollinearity issues, as all independent variables exhibit tolerance values exceeding 0. 1 and VIF values remaining below 10.

c. Heteroscedasticity Test

Table 4 Results Test Heteroscedasticity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.030	.016		1,845	.068
	Capital Intensity	-.002	.010	-.018	-.172	.864
	Firm Size	.000	.001	- .024	- .256	.799
	Firm Age	.000	.000	.128	1.192	.236
a. Dependent Variables: ABS_RES						

Source: Processed data from SPSS 27, 2025

The results of the heteroscedasticity test presented in table 4 show that the significance values (Sig.) for the independent variables are as follows: capital intensity at 0.864, firm size at 0.799, and firm age at 0.236. As all these significance values exceed the threshold of 0.05, we can conclude that the regression model does not exhibit any symptoms of heteroscedasticity.

d. Autocorrelation Test

Table 5 Results Test Autocorrelation

Durbin Watson					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.435[a]	.189	.169	.1667592370	1.167
a. Predictors: (Constant), Capital Intensity, Firm Size, Firm Age					
b. Dependent Variable: Agresivitas Pajak					

Source: Processed data from SPSS 27, 2025

The results of the autocorrelation test, outlined in Table 5, reveal a Durbin-Watson statistic of 1. 167, which falls within the range of -2 to +2. This finding indicates that there is no evidence of autocorrelation in the regression model.

Hypothesis Testing Results

a. Multiple Linear Regression Test

Table 6 Test Results Equality Regression Linear Multiple

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.033	.107		.308	.759
	Capital Intensity	-.222	.066	-.327	-3.364	.001
	Firm Size	.011	.004	.235	2.751	.007
	Firm Age	.001	.002	.060	.609	.162
	a. Dependent Variables: Tax Aggressiveness (ETR)					

Source: Processed data from SPSS 27, 2025

Based on the multiple linear regression equation test in table 6, the multiple linear regression model can be developed as follows:

Y = 0.033 – 0.222 + 0.011 + 0.001 + e

The results of the regression equation can be interpreted as follows:

1. The constant term is 0.033, indicating that if capital intensity, firm size, and firm age have no effect (have a value of 0 or constant), then the ETR value is 0.033.
2. The regression coefficient for X1, representing capital intensity, is -0.222. This indicates that for each one-unit increase in capital intensity, the effective tax rate (ETR) decreases by 0.222. Conversely, a one-unit decrease in capital intensity would result in an increase of 0.222 in the ETR, assuming all other factors remain constant (ceteris paribus). This negative coefficient signifies an inverse relationship between capital intensity and the ETR.
3. The regression coefficient for the firm size variable, denoted as X2, is 0.011. This indicates that for every one-unit increase in firm size, the effective tax rate (ETR) will rise by 0.011. Conversely, a one-unit decrease in firm size will lead to a reduction of 0.011 in the ETR, all else being equal (ceteris paribus). This positive coefficient signifies a unidirectional relationship between firm size and the ETR.
4. The regression coefficient X3 is a firm age variable of 0.001, which means that every increase of one unit of firm age will increase ETR by 0.001 and vice versa, every decrease of one unit of firm age will decrease ETR by 0.001 (ceteris paribus). A positive coefficient means that there is a unidirectional relationship between the firm age variable and ETR.

b. Coefficient of Determination (R2)

Table 7 Results Coefficient Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.435[a]	.189	.169	.1667592370

a. Predictors: (Constant), Capital Intensity, Company Size, Company Age
b. Dependent Variable: Tax Aggressiveness

Source: Processed data from SPSS 27, 2025

Based on the evaluation findings from the determination coefficient, the adjusted R2 figure is 0.169. This indicates that the independent variables, which include capital intensity, company size, and company age, account for 16.9% of the variation in the tax aggressiveness variable. The remaining 83.1% of the variation is influenced by factors not included in the analyzed regression model.

c. t-test (Partial Test)

Table 8 Results Test t Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.033	.107		.308	.759
	Capital Intensity	-.222	.066	-.327	-3.364	.001
	Firm Size	.011	.004	.235	2.751	.007
	Firm Age	.001	.002	.060	.609	.162
	a. Dependent Variable: Agresivitas Pajak (ETR)					

Source: Processed data from SPSS 27, 2025

Based on testing table 8, the results of the significance test in this study are as follows:

1. Hypothesis Test 1

Capital intensity presents a t-value of 3.364, exceeding the t-table threshold (3.364 > 1.980), and carries a significance level of 0.001, which falls below 0.05. Hence, it can be inferred that capital intensity significantly influences tax aggressiveness since the t-value is greater than the t-table, and the significance level is less than 0.05. Furthermore, the negative t-statistic value indicates that capital intensity adversely impacts the Effective Tax Rate (ETR). Simply put, as capital intensity increases, the ETR value declines. Nevertheless, considering that ETR serves as a negative indicator for tax aggressiveness—where a lower ETR signifies heightened tax aggressiveness—it can be asserted that capital intensity significantly correlates positively with tax aggressiveness. This indicates that increased capital intensity correlates with a greater likelihood for the company to partake in tax aggressiveness. Consequently, H1 is affirmed, asserting that capital intensity positively influences tax aggressiveness significantly.

2. Hypothesis Test 2

The size of the firm shows a t-value of 2.751, surpassing the t-table threshold (2.751 < 1.980) and displaying a significance level of 0.007, which is

below 0.05. Consequently, it can be inferred that firm size substantially influences tax aggressiveness since t-value < t-table and the significance level < 0.05. Furthermore, the positive t-statistic reflects that the size of the firm positively impacts the Effective Tax Rate (ETR). This signifies that as the firm's size increases, so does the ETR. However, considering that ETR serves as a negative indicator of tax aggressiveness, where an elevated ETR denotes a diminished level of tax aggressiveness, it can be established that firm size adversely affects tax aggressiveness. Thus, the implication is clear: larger firms are less inclined to participate in tax aggressiveness. Therefore, H2 is dismissed, which asserts that firm size has a notably positive influence on tax aggressiveness.

3. Hypothesis Test 3

The age of the firm exhibits a t-value of 0.609, which is less than the t-table value (0.609 < 1.980) and presents a significance level of 0.162, exceeding 0.05. As a result, we can infer that firm age does not influence tax aggressiveness since the t-value is lower than the t-table and the significance level is higher than 0.05. Based on these findings, it follows that H3 is dismissed because it does not substantiate that firm age significantly enhances tax aggressiveness.

d. F Test (Simultaneous Test)

Table 9 Results Test F

ANOVA [a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.772	3	.257	9.256	<.001 [b]
	Residual	3.309	119	.028		
	Total	4,081	122			
a. Dependent Variables: Tax Aggressiveness						
b. Predictors: (Constant), Capital Intensity, Firm Size, Firm Age						

Based on the results of simultaneous regression, the F count value is 9.256 > 2.68 and the significance value is 0.001 < 0.05. Thus, it can be concluded that capital intensity, firm size and firm age simultaneously have a significant effect on tax aggressiveness.

DISCUSSION

The Effect of Capital Intensity on Tax Aggressiveness

Based on the test results using multiple linear regression, it shows that capital intensity has a significant effect on tax aggressiveness with a t-value of 3.364> 1.980 and a significance value of 0.001 <0.05. The (-) sign on t-value means that the effect is negative. Based on the test results that have been carried out, capital intensity has a significant negative effect on the Effective Tax Rate (ETR). The negative effect of capital intensity on ETR explains that when there is an increase in capital intensity, it will result in a decrease in the ETR value. A low ETR indicates tax aggressiveness. These results explain that the higher the capital intensity, the higher the level of tax aggressiveness carried out by the company

because of the low ETR value. Thus, hypothesis 1 (H1) which states that capital intensity has a significant positive effect on tax aggressiveness is accepted. These results indicate that companies are utilizing idle funds to boost their investments in fixed assets. Energy sector companies choose to increase their investment in fixed assets because of the development of infrastructure needed for operations, long-term benefits provided by fixed assets, long-term operational cost savings and tax savings generated from the fixed assets themselves. The results of this study are in line with research conducted by Sugeng et al. (2020), Syafrizal and Sugiyanto (2022), Suyanto and Sofiyanti (2022), and Mulya and Anggraeni (2022) which state that tax aggressiveness carried out by companies can be influenced by the level of capital intensity. The higher the capital intensity owned by a company, the greater the opportunity for the company to reduce taxable profits. This can be done by utilizing the depreciation expense generated from the fixed assets which functions to reduce taxable profits at the end of the period. Thus, the company can reduce the amount of tax that must be paid.

The Effect of Firm Size on Tax Aggressiveness

The results of multiple linear regression testing indicate that firm size has a significant effect on tax aggressiveness, which can be seen from the t-value of 2.751> 1.980 and a significance value of 0.007 <0.05. The results of this study prove that firm size has a significant positive effect on the Effective Tax Rate (ETR). The positive effect produced by this study explains that the larger the firm size, the higher the company's ETR value. A high ETR means that there is no aggressive tax action. These results explain that the higher the firm size, the lower the level of tax aggressiveness carried out by the company and the company is more tax compliant. Thus, hypothesis 2 (H2) which states that firm size has a significant positive effect on tax aggressiveness is rejected. Large companies tend to prioritize tax compliance to protect their reputation. Large companies are careful in implementing tax avoidance practices because they are under close supervision from stakeholders, including the government, shareholders, and the public. They also have better resources, such as qualified tax advisors, who can provide appropriate advice on more conservative tax strategies to avoid high tax risks. The larger a company, the more it is known to the public, especially investors, which drives trust and investment. The government will be more likely to examine the tax obligations of large companies than small companies, making them the main target for tax supervision. The results of this study are in line with research conducted by Manurung et al. (2022), Firdausy (2022), Marhan et al. (2023), Amaliyah (2024), Widianingru et al. (2024) that firm size has a negative effect on tax aggressiveness. The larger a company is, the more supervision it will receive from related stakeholders, the company will be subject to government regulations. The government, in this case the Directorate General of Taxes, will carry out more supervision of large companies. The higher the level of supervision, the more careful the company will be in carrying out aggressive tax planning, so the less likely the company will be to practice tax aggressiveness.

The Effect of Firm Age on Tax Aggressiveness

The results of multiple linear regression testing indicate that firm age does not affect tax aggressiveness, as seen from the t-value of 0.609 <1.980 and a significance value of 0.162> 0.05. The results of this study prove that firm age does not affect tax aggressiveness. Thus, hypothesis 3 (H3) which states that firm age has a significant positive effect on tax aggressiveness is rejected. The results of this study indicate that firm age does not affect tax aggressiveness, perhaps because tax regulations are applied equally to all companies, both newly established and long-standing companies. Young companies may not have enough experience in managing taxes, but they also tend to be closely monitored while older companies have more experience in tax strategies, but they are also more regulated and supervised by the tax authorities. As a result, there is no direct relationship between firm age and tax aggressiveness. As the age of the company increases, it will have little or no effect on the company's desire to take tax aggressive actions because older companies tend to have stable operations and more conservative strategies. They may be more focused on business sustainability than taking risks with aggressive tax strategies. Actions that can be taken are to be wise and careful in planning and paying taxes as the company's age and experience increases. The results of this study are not supported by the theory used, based on agency theory, the assets possessed by the company can be utilized by operators to maximize operator execution recompense, to be specific by diminishing the company's charge burden to maximize company execution, but in this study firm age did not significantly affect the level of tax aggressiveness, which means that firm age does not affect the company's desire to make tax savings through aggressiveness because the longer the company's age, the wiser the company is in carrying out its tax practices. The results of this study are in line with research conducted by Kurniawan (2022), Hutasoit and Lubis (2023), Azhar and Puspitasari (2023) which shows that the firm age variable has no effect on tax aggressiveness.

CONCLUSION AND RECOMMENDATION

Conclusion

This study was conducted to determine the effect of capital intensity, firm size, and firm age on tax aggressiveness, in which the independent variables are capital intensity measured by the ratio scale of the comparison of total fixed assets divided by the total assets of the company, firm size measured by the ratio scale of the natural logarithm (Ln) of total assets, and firm age measured by the ratio scale of the year of research minus the year the company was listed on the Indonesia Stock Exchange. After conducting the study, the following conclusions can be drawn:

1. Capital intensity has a significant positive effect on tax aggressiveness in energy sector companies listed on the Indonesia Stock Exchange for the 2021-2023 period.
2. Firm size has a significant negative effect on tax aggressiveness in energy sector companies listed on the Indonesia Stock Exchange for the 2021-2023 period.

3. Firm age has no effect on tax aggressiveness in energy sector companies listed on the Indonesia Stock Exchange for the 2021-2023 period.

Recommendation

After conducting research and analyzing the existing research results related to the influence of capital intensity, firm size, and firm age on the tax aggressiveness of energy sector companies listed on the Indonesia Stock Exchange in 2021-2023, the author has several suggestions that can be used as a basis for consideration for companies and interested parties. The suggestions are as follows:

1. The government should educate and socialize companies about the value of good tax compliance. By giving them a better understanding of the legal and reputational consequences of aggressive tax practices, companies can better understand the importance of following tax regulations and avoiding risks in the future.
2. For companies, it is expected that they can make more careful considerations in carrying out tax planning so as not to give rise to the risk of tax sanctions.

ADVANCED RESEARCH

For further researchers, it is expected to use other variables that may have an influence on tax aggressiveness and examine different sectors, then use different or more recent measuring instruments or proxies and research periods.

REFERENCES

Aisyah, P., Adib, N., & Rahmanti, VN (2024). Does transfer pricing, sales growth, and capital intensity affect tax aggressiveness? Journal of Accounting and Finance Review, 14(2), 459–476.

Amaliyah, A. (2024). The effect of company size, political connections, profitability, and leverage on tax aggressiveness with good corporate governance (GCG) as a moderating variable: An empirical study of manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2020–2022 (Bachelor's Thesis, State Islamic University of Maulana Malik Ibrahim).

Ardhi, F., & Lubis, AW (2023). The moderating role of tax rate reduction and firm size in the effect of tax aggressiveness on company value. Ilomata International Journal of Tax & Accounting, 4(3), 451–469.

Azhar, MF, & Puspitasari, W. (2023). The effect of thin capitalization, company size, sales growth, and company age on tax avoidance. Trisakti Journal of Economics, 3(1), 1955–1966.

Brederode, RF van. (2020). Ethics and taxation. Springer Nature Singapore Pte Ltd.

Brigham, EF, & Houston, JF (2019). Fundamentals of financial management (14th Edition, Book 2). Salemba Empat.

Fauzia, AR, Budiman, NA, & Delima, ZM (2023). The effect of liquidity, leverage, asset intensity, company size, and deferred tax on tax aggressiveness. Journal of Taxation (JOT), 4(1), 89–111.

Firdausy, AN, & Adiwijaya, ZA (2022). The influence of Islamic corporate social responsibility, company size, company age, and leverage on tax

aggressiveness in state-owned companies listed on the Jakarta Islamic Index. Sultan Agung Scientific Journal, 1(1), 568–578.
Freeman, R. E. (2018). Stakeholder theory: Concepts and strategies. Cambridge University Press.
Herlinda, AR, & Rahmawati, MI (2021). The effect of profitability, liquidity, leverage and company size on tax aggressiveness. Journal of Accounting Science and Research, 10(1), 1–18.
Hutasoit, E., & Lubis, CW (2023). The effect of deferred tax burden, company size, leverage, company age, and independent board of commissioners on tax aggressiveness in metal and mineral sub-sector manufacturing companies listed on the IDX in 2017–2021. JSAP: Journal of Syariah and Public Accounting, 6(2), 1–13.
Indonesian Stock Exchange. (nd). www.idx.com
Indrawati, N., Hasanah, N., & Musyaffi, AM (2024). The influence of institutional ownership, profitability, and age of the company on tax avoidance. International Journal of Current Economics & Business Ventures, 4(1), 39–51.
Kaligis, V. (2024). The effect of multinationality, tax haven, and firm size on tax avoidance in energy sector companies listed on the IDX in 2021–2023 (Thesis, Sam Ratulangi University).
Kasmir. (2017). Introduction to financial management (2nd Edition). Prenada Media.
Koroh, N., Sondakh, J., & Weku, P. (2023). The effect of audit committee, capital intensity, and ownership structure on tax aggressiveness in manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the period 2021–2023. Thesis, Sam Ratulangi University.
Kurniawan, MFA (2022). The effect of profitability, leverage, company size, and company age on tax avoidance (Thesis, Hayam Wuruk Perbanas University).
Manurung, R., Pangerapan, S., & Mintalangi, S. (2022). The effect of liquidity, leverage, and company size on tax aggressiveness in industrial sector companies on the Indonesia Stock Exchange for 2019–2021. J. Governance, Tax, Audit, 1(2), 210–217.
Mardiasmo. (2023). Taxation (2023 Edition). Andi.
Marhan, F., Hasanah, N., & Utaminingtyas, TH (2023). The effect of profitability, company size, and capital intensity on tax aggressiveness in property and real estate companies listed on the Indonesia Stock Exchange for the period 2019–2021. Journal of Accounting, Taxation and Auditing, 4(3), 852–864.
Mulya, AA, & Anggraeni, D. (2022). Company size, capital intensity, asset funding, and profitability as determinants of tax aggressiveness factors. Owner, 6, 4263–4271.
Ojala, H., Malo, P., & Penttinen, E. (2023). Private firms' tax aggressiveness and light pre-tax-audit interventions by the tax administration. Journal of International Accounting, Auditing and Taxation, 51, 100550.
Oktavia, L., Kalangi, L., & Lambey, R. (2023). The effect of capital intensity, profitability, and company size on tax aggressiveness in energy sector

companies listed on the Indonesia Stock Exchange. Journal of Accounting and Taxation, 18(2), 101–112.

Oktyawati, D., Siregar, HO, & Rumiyati. (2023). Earnings management and tax aggressiveness before and during the Covid-19 pandemic (An evidence from Indonesia). Ilomata International Journal of Tax and Accounting, 4(2), 236–249.

Prasetyo, T., & Raphael, A. (2024). The effect of capital intensity, company age, audit committee, and board gender diversity on tax avoidance. Scientific Journal of Accounting and Business, 16(1), 70–83.

Putri, HW, Handayani, D., & Djefris, D. (2018). Analysis of the influence of company size, executive character, and managerial ownership on tax aggressiveness. Journal of Accounting and Management, 13, 17–33.

Republic of Indonesia, Ministry of Finance. (2024). 2023 tax revenue exceeds target, Minister of Finance: Hattrick, three times in a row. https://www.kemenkeu.go.id/informasi-publik/publikasi/berita-utama/Penerimaan-Pajak-2023-Lampaui-Target

Rizkiawan, V. (2023). The effect of ROA, leverage, company size, and company age on corporate tax aggressiveness. Indonesian Journal of Accounting and Finance, 19(3), 140–152.

Robot, Constantinopel YC, Sondakh, J., & Mintalangi, SSE (2022). The effect of capital intensity, company size, and sales growth on tax avoidance (Study on food and beverage companies listed on the Indonesia Stock Exchange in 2017–2020). Going Concern: Journal of Accounting Research, 17(1), 23–33.

Shaffira, PA, Yusralaini, & Humairoh, F. (2022). The effect of multinationality, tax haven, thin capitalization, and firm size on tax avoidance. Journal of Taxation (JOT), 3(2), 52–78.

Sugeng, S., Prasetyo, E., & Zaman, B. (2020). Does capital intensity, inventory intensity, firm size, firm risk, and political connections affect tax aggressiveness? JEMA: Scientific Journal of Accounting and Management, 17(1), 78–87.

Sugiyono. (2022). Quantitative, qualitative, and R&D research methods. Alphabet.

Suyanto, & Sofiyanti, UO (2021). Capital intensity, profitability, tax aggressiveness: Company size as a moderating variable. Journal of Tax Accounting, Sarjanawiyata Tamansiswa University, 1(2), 117–128.

Syafrizal, S., & Sugiyanto, S. (2022). The effect of capital intensity, inventory intensity, and leverage on tax aggressiveness. Scientific Journal of Reflection: Economic, Accounting, Management and Business, 5(3), 829–842.

Tandayu, B., Kalangi, L., & Tangkuman, SJ (2023). The uncovering tax avoidance drivers in IDX mining firms 2019–2021: Financial distress, thin capitalization, and CSR disclosure effects. Ilomata International Journal of Tax and Accounting, 4(2), 221–235.

Tomasowa, TED (2023). Tax accounting. Nas Media Pustaka.

Toni, N., & Anggara, L. (2021). Partial least square analysis: A study of property and real estate companies listed on the Indonesia Stock Exchange. Merdeka Kreasi Group.

Utami, PN, & Anggraeni, D. (2024). The effect of capital intensity, liquidity, leverage, and company size on tax aggressiveness in property and real estate companies listed on the IDX in 2019–2023. Journal of Accounting and Business, 17(1), 75–88.

Wibowo, F. (2023). Statistical data processing and analysis with SPSS. Andi.

Widianingru, I., Kangra, J., Dini, S., & Anggono. (2024). The effect of sales growth, company age, firm size, and leverage on tax avoidance on trading service company and listed investments on the Indonesia Stock Exchange in the period 2017–2021. Indonesian Journal of Accounting and Finance, 20(2), 120–134.

Witness, G. (2019). Indonesia's shifting coal money 3: Taxing times for Adaro. https://www.globalwitness.org/

Wulandari, TR, & Purnomo, LJ (2021). Company size, company age, sales growth, managerial ownership, and tax avoidance. Scientific Journal of Accounting and Business.

Weygandt, J. J., Kimmel, P. D., & Kieso, D. E. (2019). Financial accounting (11th ed.). Wiley.

Yahya, A., Agustin, EG, & Nurastuti, P. (2022). Firm size, capital intensity, and inventory intensity on tax aggressiveness. Journal of Accounting Exploration, 4(3), 215–225.

Yanti, LD, & Hartono, L. (2019). Effect of leverage, profitability and company size on tax aggressiveness. ECo-Fin, 1(1), 1–11.