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Article

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Suggested Citation: Hendayana, Yana; Ramdhany, Muhamad Arief; Pranowo, Agus Setyo; Rachmat, Radhi Abdul Halim; Herdiana, Emil (2024) : Exploring impact of profitability, leverage and capital intensity on avoidance of tax, moderated by size of firm in LQ45 companies, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 11, Iss. 1, pp. 1-13, <https://doi.org/10.1080/23311975.2024.2371062>

This Version is available at:

<https://hdl.handle.net/10419/326373>

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To cite this article: Yana Hendayana, Muhamad Arief Ramdhany, Agus Setyo Pranowo, Radhi Abdul Halim Rachmat & Emil Herdiana (2024) Exploring impact of profitability, leverage and capital intensity on avoidance of tax, moderated by size of firm in LQ45 companies, Cogent Business & Management, 11:1, 2371062, DOI: [10.1080/23311975.2024.2371062](https://doi.org/10.1080/23311975.2024.2371062)

To link to this article: <https://doi.org/10.1080/23311975.2024.2371062>



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Published online: 04 Jul 2024.



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Exploring impact of profitability, leverage and capital intensity on avoidance of tax, moderated by size of firm in LQ45 companies

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ABSTRACT

This study examines how profitability, leverage and intensity of capital impact tax avoidance and considers firm size as a moderating factor. It focuses on LQ45 companies listed on the Indonesia Stock Exchange from 2019 to 2022. The research method uses moderated regression analysis with quantitative data, analyzed by Eviews12 software. The selection of samples for this research was purposive sampling, utilizing the criteria acquired from 26 companies. The results indicate that profitability has an effect on tax avoidance. Leverage has an effect to tax avoidance. Capital intensity does not affect tax avoidance. Firm size strengthens the influence of profitability and leverage, but weakens capital intensity on tax avoidance.

ARTICLE HISTORY

Received 26 January 2024
Revised 24 May 2024
Accepted 17 June 2024

KEYWORDS

Tax avoidance;
profitability; leverage;
intensity of capital; firm
size

REVIEWING EDITOR

Sandra Alves, Higher
Institute of Accounting
and Administration,
University of Aveiro,
Portugal

SUBJECTS

Statistics for Business;
Finance & Economics;
Administration and
Management; Financial
Management

Introduction

Taxes are one of the most significant sources of revenue for a country and can increase national development activities. Taxes play a decisive role in a country's progress. Therefore, taxation is an important problem that must be developed and managed well in Indonesia. The government sees taxes as a company decision and the highest basis for government revenue; however, companies see taxes as a burden that reduces net profits. Based on this theory, a company aims to increase its profits (Bocken & Short, 2016).

Tax avoidance behavior can also represent the subjective actions of a business manager for personal purposes (Ha et al., 2022). Taxes in the government sector are sources of income used to finance state expenditure. However, this is inversely proportional to taxpayers' perspectives, especially corporate taxpayers. According to them, taxes were an expense that could reduce profits. Taxpayers usually pay taxes involuntarily, because tax payments in Indonesia use a self-assessment system. A significantly lower ETR compared to industry peers or historical averages might indicate aggressive tax planning or potential tax avoidance in Indonesia (Sadjiarto et al., 2020). Large fluctuations in ETRs over time, especially if not attributable to changes in tax laws or business operations, could signal aggressive tax planning or

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This article has been corrected with minor changes. These changes do not impact the academic content of the article.

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income-shifting practices (Ogbeide et al., 2022). This understanding has resulted in various taxpayer efforts to pay as little tax as possible or avoid tax (Otusanya, 2011).

The LQ45 index represents a stock market index on the Indonesia Stock Exchange (IDX) comprising 45 companies meeting a particular criterion, including the top 45 companies with the highest market capitalization over the preceding 12 months. In the last year, there has been an increase in the value of the LQ45 index on the IDX, along with an increase in several shares, although there are companies that alternately enter and leave the index. The shares included in the LQ45 index were determined in February–July and August–January. Although they are included in the list with the highest capitalization, several companies in LQ45 practice Tax Avoidance.

Several LQ45 companies carry out tax avoidance practices, which cause a significant loss of state revenue. Tax avoidance is a legal method of reducing the tax liability that taxpayers accept and do not violate tax regulations. Tax avoidance can be achieved by focusing on gaps in tax regulations (Gu & Wang, 2023). Various factors influence tax avoidance, including profitability, leverage, intensity capital and firm size. Research related to profitability states that profitability positively affects tax avoidance (Salihu et al., 2015). Nevertheless, profitability may negatively affect the tax avoidance (Kovermann & Velte, 2019). Our study on the impact of profitability, leverage and capital intensity on tax avoidance in LQ45 companies aligns with and extends the literature on corporate tax strategies. For instance, Rini et al. (2023) analyzed corporate strategies to address public concerns about tax avoidance, focusing on the trade-off between legitimacy and risk reduction in the context of mining and energy companies in Indonesia and Australia. Their findings highlight the importance of strategic approaches to tax planning, which can help companies balance the need for legitimacy with the desire to minimize tax liabilities.

One factor that can impact tax avoidance is the company's leverage. This indicates that the ability of a company to finance is an operating activity. The ratio of leverage calculation reveals the proportion of a company's assets that come from borrowed funds (Halling et al., 2016), which means that a company with significant debt must pay significant interest charges to creditors. This high interest can decrease the profits before the income of the tax burden, reducing the tax burden the company has to pay in the current period (Aghion et al., 2016). This motivates companies to engage in tax-avoidance practices. Research suggests that leverage positively affects tax avoidance (Deng et al., 2020; Fossen & Simmler, 2016). In contrast, other studies have suggested the opposite (Faulkender & Smith, 2016; Zou et al., 2019). Therefore, the impact of leverage on tax avoidance remains controversial and requires further investigation.

Capital intensity was the last factor that influenced the tax avoidance was capital intensity. The intensity of capital is how much funds a company invests on fixed assets to finance its operations. As depreciation costs for an asset increase, the tax paid by the company decreases. Capital intensity is linked with tax avoidance, stating that company-fixed assets enable companies to reduce their tax expenses as a result of depreciation arising from fixed assets each year. Several studies support the positive effect of capital intensity on tax avoidance was carried out by several researchers (Chen et al., 2021; Herlina et al., 2023). Nevertheless, several studies find that capital intensity does not affect tax evasion. Capital intensity has a negative effect in the tax avoidance in certain situations (McClure et al., 2018).

Company size moderated this variable. Firm size refers to the ability, stability and expertise required to carry out economic activities. Large companies tend to attract the government's attention to profits earned and tax authorities regarding tax payments; therefore, company managers are seen as wanting to act obediently and be more transparent in presenting financial reports. Large companies will think more about the effects of tax management. These results are strengthened by several studies (Belz et al., 2018; Gaertner et al., 2024), showing that firm size can positively affect tax avoidance. Other studies have confirmed that company size harms tax avoidance (Hasan et al., 2021).

Several existing studies have researched the determinants of tax avoidance in various contexts, but there are some gaps in the literature concerning the specific factors influencing tax avoidance in Indonesian companies, especially those listed in the LQ45 index. Prior studies have investigated the individual impact of factors like profitability, leverage and capital intensity on tax avoidance. However, there

may be a gap in the literature regarding how these factors interact and how the size of the firm moderates these relationships in the context of Indonesian LQ45 companies.

This study analyzes the influence of profitability, leverage and intensity of capital on tax avoidance, moderated by firm size, in LQ45 companies listed on the IDX from 2019 to 2022. This study focuses on the following variables: profitability (Return on Assets/ROA ratio), leverage (Debt Equity Ratio/DER ratio), capital intensity (Capital Intensity/CAPIN ratio), tax avoidance (Cash Effective Tax Rate/CETR ratio) and firm size (total assets). This study also focuses only on LQ45 index companies. We calculated the estimation using moderated regression analysis (MRA).

Literature review

According to Bird and Davis-Nozemack (2018), tax avoidance was an effort to avoid taxes, but this was implemented legally (did not violate law) and it is safe for taxpayers because it did not challenge existing tax regulations. Avoidance of tax is usually defined as a scheme of tax avoidance for minimizing tax expenses by exploiting loopholes in the country's tax provisions. Conceptually, tax avoidance schemes are legal or legitimate because they do not break tax provisions.

Tax avoidance is defined as efforts to minimize or save taxes through applicable regulations. The approach often used is to calculate the Cash Effective Tax Rate (CETR) by dividing cash spent on the costs of tax by profit before the tax (Erickson, 2017). This measurement is used to better describe the existence of tax avoidance activities in a company. The relationship between tax avoidance and companies seeking to maximize profits is very close. Taxes are elements that reduce and harm company profits. On the other hand, taxes are essential to the country.

Profitability describes the ability of a company to generate benefits. A company with a high profitability ratio indicates that the company has an excellent ability to generate profits. In other words, the higher the profitability ratio, the greater the company's ability to generate benefits. Profitability can be measured using several ratios (Pratama et al., 2022): Gross Profit Margin (GPM), net profit margin (NPM), Return on Assets (ROA) and Return on Equity (ROE).

Several previous researchers measured the effect of profitability ratios on tax avoidance using Return on Assets (ROA) (Handayani, 2020). The reason for measuring profitability using ROA is that ROA is an indicator that reflects a company's operational performance. ROA can be used as a measure of net profit obtained using assets. Higher ROA, asset productivity and levels of company profitability (Alarussi & Gao, 2021). Several studies use ROA as a method for measuring profitability; thus, researchers use the same tool, ROA.

The leverage ratio is used to measure the extent of a company's ability to manage assets financed from debt, both short- and long-term. Leverage is a ratio that compares the amount of debt to the amount of company assets. A high leverage ratio indicates that a company's debt is quite large, so if a company experiences difficulty paying its debt, both short- and long-term, it will impact its health condition (Abubakar, 2016). There are several types of leverage ratios used by companies, including the Debt to Asset Ratio (DAR), Debt Equity Ratio (DER), long-term debt to equity ratio (LTDtER), Times Interest Earned Ratio (TIER) and Ratio of Coverage. Following Rastogi and Saxena (2016), the Debt Equity Ratio (DER) was used to measure a company's financial leverage, calculated by dividing total liabilities by shareholder equity. DER can also be used in company tax planning. A higher DER indicates that the company has aggressively financed growth through debt.

In the Capital Intensity (CAPIN) concept, companies are faced with sacrificing funds allocated for operational activities and asset funding to achieve profits. Capital intensity also reflects the capital required by a company to generate income. Purchasing and selling fixed assets can offer additional funding or capital increases. The sale of fixed assets aims to finance company activities (Kanapickienė & Grundienė, 2015).

Ownership of significant fixed assets means that depreciation costs are also high. High depreciation costs can lower company tax expenses. As result, the higher company's fixed asset ownership, more it encourages the company to engage in aggressive actions in terms of taxation. Capital intensity in this research is calculated using the fixed asset intensity ratio CAPIN. Following these calculations, capital

intensity is closely related to company investment and fixed assets (Aminah et al., 2018; Darsani & Sukartha, 2021). This shows that companies with more fixed assets make lower tax payments than those with fewer fixed assets (Patin et al., 2020). Firm size represents the size of the company. Larger companies with more intricate business operations tend to have greater potential impacts on the environment and society. Consequently, these companies often disclose more information, showcasing their accountability to the public (Khamisan & Astuti, 2023). Following the calculations, firm size uses the total asset value.

This research framework identifies the influence of the independent variables Profitability, Leverage and Intensity of Capital on tax avoidance and Firm size functions as a moderate variable. The framework explains the relationship between these variables in the research context. Several studies support this by finding that profitability, as measured by the ROA proxy, has a positive effect on tax avoidance (Bocken & Short, 2016; Gu & Wang, 2023; Otusanya, 2011). Based on this research, leverage has a positive effect on tax avoidance (Darsani & Sukartha, 2021; Faulkender & Smith, 2016; Rastogi & Saxena, 2016). Other research results also show that capital intensity has a positive effect on tax avoidance (Herlina et al., 2023; Zou et al., 2019). Based on this research, firm size can strengthen the positive influence of profitability on tax avoidance (Alarussi & Gao, 2021; Belz et al., 2018; Gaertner et al., 2024).

The study about the effect of profitability, capital Intensity and company size on tax avoidance with leverage as an intervening variable has been examined by Sofiamanan et al. (2023). In another study, tax avoidance has significant relationship with the type of audit opinions and audit fees (Salehi et al., 2020). Moreover, financial attributes (profitability, leverage, liquidity and firm growth) has a positive and significant influence on the tax planning (Tanko, 2023) to reduce tax liability and tax avoidance. Financial leverage and tax shelters (tax shield) can be used to conduct the tax avoidance (Salehi & Salami, 2020). Large companies, along with higher profitability and leverage, are linked to increased levels of corporate tax avoidance, all demonstrating significant associations (Hossain et al., 2024). Another finding suggested that income smoothing and earnings quality significantly influence the connection between tax avoidance and firm value (Akbari et al., 2018). The impact of managerial skills on tax-related behaviors has been explored extensively. For instance, Salehi et al. (2017) investigated the effects of spiritual and emotional intelligences of managers in manufacturing industries on ambiguous activities such as tax avoidance and corporate disclosure quality. They found a significant relationship between the level of intellectual skills of managers, particularly spiritual and emotional intelligence and their engagement in tax avoidance activities. The relationship between corporate social responsibility (CSR) and tax avoidance (TA) has been a subject of theoretical investigation. Ismail et al. (2024) found that activating corporate governance (CG) mechanisms mediates this relationship. Their study supports the notion that while CG positively influences the adoption of CSR, it simultaneously exerts a negative impact on TA.

Based on previous studies, here we want to test whether firm size can strengthen the influence of leverage and intensity of capital in tax avoidance. The conceptual framework of this study can be described in Figure 1.

Based on research framework, hypothesis could be formalized as follows:

H1: Profitability has a positive impact on tax avoidance.

H2: Leverage has a positive impact on tax avoidance.

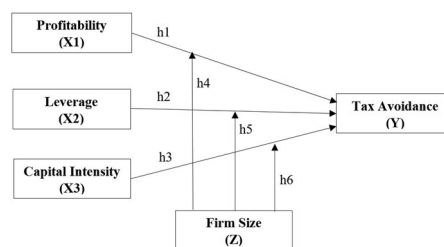


Figure 1. Research framework.

Source: Akbari et al. (2018), Alarussi and Gao (2021); Belz et al. (2018); Bocken and Short (2016); Darsani and Sukartha (2021); Faulkender and Smith (2016); Gaertner et al. (2024); Gu and Wang (2023); Herlina et al. (2023); Otusanya (2011); Rastogi and Saxena (2016); Salehi and Salami (2020) and Zou et al. (2019).

H3: Capital intensity has positive impact on tax avoidance.

H4: Firm size can strengthen influence of profitability on tax avoidance.

H5: Firm size can strengthen the influence of leverage on tax avoidance.

H6: Firm size can strengthen impact of capital intensity on tax avoidance.

Method

The source of data in this research is the financial report of the LQ45 index company for the 2019–2022 period on the IDX. LQ45 is one of the indices of the Indonesian Stock Exchange (IDX) obtained by issuers with the highest liquidity or the most share purchase and sale transactions on the Indonesian Stock Exchange. The variables tested in this study are tax avoidance (Y), profitability (X1), leverage (X2), capital intensity (X3) and firm size (Z).

This research method is quantitative to test hypotheses. Variable operationalization includes:

1. Tax Avoidance, measured through the Cash Effective Tax Ratio (CETR), namely tax payments divided by profit before tax.
2. Profitability, measured through Return on Assets, namely net profit divided by total assets.
3. Leverage, measured through the Debt Equity Ratio, namely total debt divided by equity.
4. Capital Intensity, measured through CAPIN, namely Net fixed assets divided by total assets.
5. Firm size, measured via \ln (total assets).

The population in this research comprises the financial reports of all issuers or companies included in the LQ45 index for the 2019–2022 period, accessed via www.idx.co.id.

Based on the above explanation, the researcher concluded that the criteria for companies that will be the sample in this study are as follows:

1. Companies included in the LQ45 index list on the IDX from 2019 to 2022.
2. LQ45 index companies that present complete financial reports and annual reports during the research period.
3. LQ45 index company whose annual report explains all the variables in the research.

The selection process of the sample can be illustrated in Table 1.

The sample used in this research comprised financial reports from 26 companies over a four-year research period. Using panel data, we have 104 observations.

In analyzing the data, we used descriptive and inferential analyses. Descriptive analysis refers to the mean, standard deviation and the minimum and maximum values. Hypothesis testing as inferential analysis uses MRA or interaction tests. The aim was to evaluate the relationship between the dependent and independent variables by considering firm size as a moderating variable. Before estimating MRA, the classical assumptions for regression analysis (multicollinearity, autocorrelation and heteroscedasticity) were tested. The equation for the panel data regression model using moderation is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + Z + b_1.X_1Z + b_2X_2Z + b_3X_3Z + e$$

Hypothesis testing criteria were carried out using the *F*-test, determination coefficient (*R*-squared) and *t*-test.

Table 1. Selection process of the sample.

Notes	Number of company
The company included in the LQ45 index for the 2019–2022 period	45
LQ45 index companies that were not included in a row in the 2019–2022 period	19
Sample of the companies	26

Results and discussion

Results

The results of the data processing in the form of descriptive statistics display the characteristics of the samples used in this study. Statistical tests in this research provide a descriptive picture of data from the average (mean), median, maximum, minimum and standard deviation, covering four variables: profitability, leverage, Intensity of Capital, Tax Avoidance and Firm Size. Based on the results of data processing using Eviews12, the descriptive statistics of the paper data can be seen in [Table 2](#).

The descriptive statistics reveal that dependent variable (Y), which is Tax Avoidance, ranges space from minimum of -3.11 to maximum of 0.09 . The average annual Tax Avoidance rate was 32.2% , with a standard deviation of 47.6% . Regarding variable X_1 , denoted as profitability, its values span from -2.86 to 35.8% . The mean annual profitability was 7.28% , with a standard deviation of 7.56% . The debt-to-equity ratio assesses the extent of capital used as collateral for debt. The independent variable X_2 , Leverage, maintained a constant value, with both the maximum and minimum recorded as 0.14 . The average annual value was 2.23 , with a standard deviation of 0.23 .

Descriptive statistics reveal that the independent variable (X_3), identified as Capital Intensity (CI), ranges from a minimum of 0.05 to a maximum of 0.88 . The mean annual CI score was 0.48 , with a standard deviation of 0.23 . Firm Size, used to ascertain a company's total assets, demonstrates that the moderating variable (Z) ranges from $6,990,000$ to $9,250,000$. The average Firm Size is 8.011 , indicating that LQ45 companies can possess total assets averaging IDR $483,664$ billion with a standard deviation of 0.60 per year. The data processing was transformed into a logarithmic form.

The choice of estimation method shows that the best method used in this research was the random effects model (REM). Therefore, the resumption of panel data regression was analyzed using the random impact method, as shown in the [Table 3](#).

It can be concluded that a firm size (Z) score of 0.0014 is significant for Tax Avoidance (Y). The interaction score of $ROA \times \text{Firm size}$ was 0.0135 and the interaction $DER \times \text{Firm size}$ was 0.0087 , showing statistical significance. Therefore, it could be concluded that variable Z (Firm size) acts by a pure moderator variable.

The F statistical test or model of test/ANOVA test was used to test whether the regression model in this study was good/significant or bad/non-significant. [Table 4](#) presents the result of the model fit (F -statistics).

Based on the results of the Model Fit, the Prob value of $0.0007 < 0.05$, it means the regression model is significant. [Table 5](#) presents the coefficient of determination of the model.

Table 2. Descriptive statistics.

	Profitability	Leverage	Capital intensity	Tax avoidance	Firm size
Mean	7.280577	2.233365	0.482788	-0.322115	8.011442
Median	5.565000	0.915000	0.520000	-0.220000	7.890000
Maximum	35.80000	16.11000	0.880000	0.090000	9.250000
Minimum	-2.860000	0.140000	0.050000	-3.110000	6.990000
Std. dev	7.508598	3.133152	0.232360	0.476795	0.606860
Observation	104				

Table 3. Random effect.

Variable	Coefficient	Std. error	t-Statistics	Prob
C	-20.45124	5.914419	-3.457862	0.0008
X1	0.427406	0.164741	2.594409	0.0110
X2	3.013342	1.113642	2.705845	0.0081
X3	16.05677	8.696553	1.846338	0.0679
Z	2.353525	0.716635	3.284132	0.0014
X1Z	-0.054980	0.021852	-2.516065	0.0135
X2Z	-0.350804	0.131058	-2.676715	0.0087
X3Z	-1.743515	1.083666	-1.608905	0.1109

Source: Eviews12 (2023).

Table 4. Model fit.

Weighted statistics	
<i>F</i> -statistic	3.947987
Prob(<i>F</i>-statistic)	0.000790

Source: EvIEWS12 (2023).

Table 5. Coefficient of determination.

Weighted statistics			
<i>R</i>-squared	0.223527	Mean dependent var	−0.146267
Adjusted <i>R</i> -squared	0.166909	S. D. dependent var	0.311613
S.E. of regression	0.284421	Sum squared resid	7.765972
<i>F</i> -statistic	3.947987	Durbin–Watson stat	2.555436
Prob(<i>F</i> -statistic)	0.000790		

Source: EvIEWS12 (2023).

Table 6. Model estimation.

Variable	Coefficient	Std. error	<i>t</i> -Statistics	Prob
C	−20.45124	5.914419	−3.457862	0.0008
ROA	0.427406	0.164741	2.594409	0.0110*
DER	3.013342	1.113642	2.705845	0.0081*
CI	16.05677	8.696553	1.846338	0.0679
Size	2.353525	0.716635	3.284132	0.0014*
ROA*Size	−0.054980	0.021852	−2.516065	0.0135*
DER*Size	−0.350804	0.131058	−2.676715	0.0087*
CI*Size	−1.743515	1.083666	−1.608905	0.1109
Weighted statistics				
<i>R</i> -squared	0.223527	Mean dependent var		−0.146267
Adjusted <i>R</i>-squared	0.166909	S. D. dependent var		0.311613
S.E. of regression	0.284421	Sum squared resid		7.765972
<i>F</i> -statistic	3.947987	Durbin–Watson stat		2.555436
Prob(<i>F</i> -statistic)	0.000790			

Note: * = hypothesis accepted.

Based on the research results presented in the Table 5, the *R*-square was 0.22357. This means that 22.3% of tax avoidance could be explained by profitability (ROA), leverage (DER) and Capital Intensity (CI), while the remaining 77.7% is explained by other variables that were not included in this study's model. The standard error of the regression model, labeled as S.E. of Regression, was 0.283568. This value is less than the standard deviation (S.D.) of the response variable, which is 0.311. This suggests that the regression model is valid as a predictive model.

The model estimation of all independent variables on dependent variable can be depicted in Table 6. Based on the *t*-test results of Regression Model, this can be interpreted as follows:

1. Hypothesis one (H1) Variable X1 had a *t*-statistic score of 2.594409 with a probability score of 0.0008 (<.05); thus, the hypothesis was accepted.
2. Second hypothesis (H2) Variable X2 had a *t*-statistic score of 2.705845 with a probability score of 0.0110 ($p < .05$); thus, this hypothesis was accepted.
3. Third hypothesis (H3) Variable X3 has a *t*-statistic score of 1.846338 with a probability score of 0.0679 (>.05), so the hypothesis was not accepted.
4. Fourth hypothesis (H4): Firm size moderates the relationship between ROA and CETR with a probability of 0.0014 (<.05); it can be concluded that firm size could significantly moderate the influence of X1 on Y.
5. Fifth hypothesis (H5): Firm size moderates the relationship between DER and CETR with a probability of 0.0135 (<.05) and firm size could significantly moderate the influence of X2 on Y.
6. Sixth hypothesis (H6) Firm size acts as moderator of relationship between CI and CETR with a probability of 0.1109 (>.05), it could be concluded that firm size was not able to significantly moderate influence of X3 on Y.

Discussion

Based on the research data population of 26 LQ45 companies registered in the Indonesian stock exchange for the 2019–2022 period, 104 processes were carried out on the data and hypothesis testing was also carried out. In hypothesis one (H1), hypothesis two (H2), hypothesis three (H3): The results from partial testing (*t*-test) showed that the profitability variable (ROA) had an effect and leverage (DER) had an effect on tax avoidance, but capital intensity did not affect tax avoidance. Fourth hypothesis (H4): firm size can moderate the impact of profitability on tax avoidance, fifth hypothesis (H5): firm size can moderate the influence of Leverage in Tax Avoidance and sixth hypothesis (H6): firm size do not moderate the influence of Capital Intensity in Tax Avoidance.

The test results show that profitability influences tax avoidance. Thus, the first hypothesis (H1) is accepted. ROA, which is a proxy for profitability, was a prominent factor in the imposition of income tax on the company. In this study, LQ45 is the firm with the highest ROA. A high ROA value indicates mature tax planning that results in optimal taxes and a tendency for tax avoidance activities to decrease. Companies that have high efficiency in their operational activities will calculate a lower effective tax rate than companies that operate with weak efficiency. Thus, higher ROA did impact tax avoidance. This is following what was done by Sari (2021) who was stated profitability did affect the tax avoidance.

The test results in this study show that leverage has an influence on tax avoidance so hypothesis two (H2) was accepted. Leverage is a ratio that describes the relationship between a firm's debt, capital and assets. A higher leverage value and company interest expense would increase, thereby affecting the firm's tax burden. Companies with high tax obligations choose to take on debt to reduce their tax burden (Heider & Ljungqvist, 2015). Article 6 of paragraph (1) letter a of Law Number 36 of 2008 states that debt interest is an expense that could be deducted for tax calculation purposes. Companies that choose a leverage policy receive tax incentives that take advantage of interest expenses to reduce their tax burden. Thus, leverage does not impact Tax Avoidance. This is in accordance with studies stating that leverage may have an effect on tax avoidance (Arnan et al., 2019; Riady, 2023).

The test results show that the Intensity of Capital has no influence on tax avoidance; therefore, the third hypothesis (H3) was rejected. This means that the more fixed assets a firm owns, the greater its production capacity. This results in increased income from sales due to greater production, which in turn leads to an increase in the tax burden that must be borne by a firm.

The test results in this study show that profitability moderated by Firm Size has an influence and is significant; thus, the fourth hypothesis (H4) is accepted. Firm size strengthens the impact of profitability on tax avoidance, because larger companies earn greater profits. Large companies tend to carry out tax avoidance and are always supervised or monitored by tax authorities. This can cause the firm to pay more taxes and affect its profitability. In that case, the larger the firm size, the higher the profitability of tax avoidance.

Test results on its study result Leverage which was moderated by Firm Size has an influence and is significant so fifth hypothesis (H5) was accepted. Thus, it can be concluded that the dimension of firm size has the potential to reduce the impact of leverage in tax avoidance practices. Thus, the hypothesis that company size strengthens the effect of leverage on tax avoidance (H5) was accepted. Firm size, whether large or small, can influence the level of debt the firm uses as a source of funding for its operations.

The test results in this study show that Capital Intensity moderated by Firm Size has no influence and is not significant; thus, sixth hypothesis (H6) was rejected. Firm size weakens the negative influence of capital intensity on tax avoidance. A larger firm size and denser and larger operational activities are carried out, so the firm requires large fixed assets to carry out its operational activities. However, as the size of the firm increases, it will receive more attention from the government or tax authorities, so that with high capital intensity, it tends to reduce tax avoidance.

The implications of the results for better tax planning and corporate governance can be explained in some ways. The companies need to enhance their profitability management. Higher profitability (as measured by Return on Assets) is associated with less tax avoidance due to effective tax planning. Companies should invest in robust financial planning and analysis teams that can devise tax strategies aligning with their profitability goals. Understanding the relationship between profitability and tax obligations,

companies can optimize their profit margins while remaining compliant with tax regulations (Wahyuni et al., 2019). The companies also need to utilize the strategic leverage. Higher leverage, represented by the debt-to-assets ratio, can reduce tax expenses through interest deductions, thus affecting tax avoidance behavior. Companies can strategically manage the capital structure to balance debt and equity, ensuring they maximize interest deductions without over-leveraging. This requires a careful assessment of financing options and their tax implications, fostering a more informed approach to borrowing and investment decisions (Darsani & Sukartha, 2021). The companies also have to consider the capital intensity because it does not significantly affect tax avoidance. Companies should recognize that investments in capital assets may not directly influence their tax avoidance strategies. Instead, they should focus on other factors, such as profitability and leverage, for more effective tax planning. Ideally, the capital intensity must positively affect the tax avoidance (Widyastuti et al., 2022).

The interesting part of this study lies in the use of firm size as a moderator variable. Firm size moderates the relationships between profitability, leverage and tax avoidance, with larger firms showing a different dynamic in these relationships. Larger companies should tailor their tax planning strategies to account for their scale. This might include implementing more sophisticated tax compliance programs and leveraging their resources to influence tax policy and negotiations (Chyz et al., 2021). All these findings point to the need to implement strong corporate governance mechanisms that can help mitigate opportunistic tax avoidance behaviors. Companies should strengthen their governance frameworks by establishing clear policies, enhancing board oversight and ensuring transparent financial reporting. This includes setting up audit committees and risk management practices that can detect and prevent aggressive tax avoidance tactics (Payne & Raiborn, 2018). Strategic approaches to tax planning are crucial for companies as they navigate the delicate balance between maintaining legitimacy and minimizing tax avoidance. By adopting effective tax planning strategies, companies can ensure compliance with regulations while optimizing their tax obligations. This not only enhances their reputation and credibility but also fosters a sustainable and ethical approach to corporate governance (Rini et al., 2023).

Conclusion

Our study explores the impact of profitability, leverage and capital intensity on tax avoidance in LQ45 companies, with firm size as a moderating factor. The findings reveal that profitability and leverage are strongly connected to tax avoidance practices. Specifically, higher profitability and greater leverage are associated with increased tax avoidance activities. In contrast, capital intensity does not significantly affect tax avoidance. Moreover, the moderating role of firm size is noteworthy. Larger firms amplify the effects of profitability and leverage on tax avoidance, indicating that the influence of these factors is more pronounced in bigger companies. Conversely, the influence of capital intensity on tax avoidance diminishes with increasing firm size, suggesting that larger firms with high capital intensity are less inclined to engage in tax avoidance activities.

The findings indicate that profitability, measured by Return on Assets (ROA), positively impacts tax avoidance, suggesting that companies with higher profits may engage less in tax avoidance due to effective tax planning. Leverage, measured by the debt-to-assets ratio (DER), also affects tax avoidance, as higher leverage can reduce tax expenses through interest deductions. However, capital intensity (CI) does not significantly influence tax avoidance. Additionally, firm size moderates the effects of profitability and leverage on tax avoidance, weakening their influence. This highlights the importance for managers to consider profitability, leverage and firm size in their tax planning strategies, especially in larger firms. These results underscore the importance of considering firm size when analyzing the determinants of tax avoidance and highlight the need for tailored tax policies and corporate governance practices that address the specific characteristics of firms based on their size and financial attributes.

Managers of the companies should prioritize effective tax planning strategies, particularly in larger firms where profitability's impact on tax avoidance can be moderated. They should carefully manage leverage, understanding its potential to reduce tax avoidance through interest expenses. However, capital intensity seems to have no significant influence on tax avoidance. By considering these findings, managers can tailor their tax planning efforts to enhance profitability and compliance while navigating the complexities of firm size and leverage.

Authors' contributions

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Disclosure statement

There are no relevant financial or non-financial competing interests to report.

Funding

No funding was received

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Data availability statement

The data that support the findings of this study are available from the corresponding author, YN, upon reasonable request. [file: Table Sample LQ45.xlsx].

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