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Original Article

Effect of Leverage on Tax Avoidance in Property and Real Estate Sector Companies Listed on the Indonesia Stock Exchange

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Abstract

Property and real estate firms need heavy funding for land, construction, and assets. Debt raises leverage. Deductible loan interest cuts taxable income, linking leverage to tax avoidance. This study analyzes how leverage impacts tax avoidance in property and real estate companies listed on the Indonesia Stock Exchange between 2019 and 2023. The topic was chosen given the importance of a company's financing structure in managing its tax burden, especially because debt use incurs interest expenses that can influence taxable income. A quantitative approach is adopted in this research, which examines 92 property and real estate companies traded on the Indonesia Stock Exchange during 2019–2023. Purposive sampling based on predetermined criteria produced a sample of 59 companies. Over the five years of observation, 295 firm-year observations were analyzed in total. According to the results, leverage significantly and positively influences tax avoidance, as shown by a regression coefficient of 0.121399, a t-statistic of 2.846968, and a p-value of 0.0047. Since the p-value is below 0.05, the hypothesis is accepted. These findings indicate that debt utilization levels represent one factor associated with tax avoidance in property and real estate companies. Insight into the relationship between funding structure and the management of corporate tax burdens during the study period is provided by these findings.

Keywords: Indonesia Stock Exchange, Leverage, Property, Real Estate, Tax Avoidance.

1. Introduction

Indonesia, one of the developing nations, keeps advancing economic and infrastructure development throughout its regions. Considerable funds are needed for these undertakings, and taxes continue to function as a key revenue stream for the state, supporting the financing of public administration, infrastructure growth, and nationwide development efforts (Amin et al., 2019). Based on data from the Ministry of Finance and the Directorate General of Taxes, Indonesia's tax revenue fluctuated during the 2019-2023 period. Tax revenue reached Rp1,332.67 trillion in 2019 but decreased to Rp1,072.11 trillion in 2020 due to the impact of the COVID-19 pandemic. Tax revenue subsequently recovered to Rp1,278.63 trillion in 2021, increased to Rp1,716.77 trillion in 2022, and reached Rp1,869.23 trillion in 2023 (Asrida et al., 2024). These developments demonstrate the importance of maintaining tax revenue to support the sustainability of national development.

A crucial role in financing national development, providing public facilities, and supporting government operations is played by taxes, which are a primary source of state revenue. Law Number 7 of 2021, which addresses the Harmonization of Tax Regulations, describes a tax as a mandatory contribution that individuals or companies owe to the state.

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This obligation is legally binding, provides no direct return, and is used for state purposes so as to secure the maximum prosperity of the populace. Supporting Indonesia's fiscal independence and sustainable development therefore requires optimizing tax revenue.

Tax revenue is also a matter of significant importance, as its realization is influenced by taxpayer compliance levels and prevailing economic conditions. Afandi (2022) notes that tax revenue contributes significantly to state income and is used to fund government operations and public services. Within a corporate setting, the conflicting interests between the government, which seeks optimal tax revenue, and companies, which aim to maximize profits, can encourage the adoption of tax burden management strategies, including tax avoidance.

Imposed based on applicable laws and regulations and used for the greatest prosperity of society, a tax is a mandatory contribution to the state. Taxes are viewed by the government as an important source of revenue, while companies regard them as an expense that reduces net profit. This difference in interests may encourage companies to manage their tax obligations in various ways. Companies that generate higher profits generally face greater tax liabilities. This may create incentives for companies to minimize their tax burden through tax planning, including tax avoidance (Dewanti & Sujana, 2019).

Tax avoidance can be defined as the efforts companies make to lessen their tax burden by taking advantage of provisions and differences within tax regulations, all while staying within the applicable legal framework (Fortuna & Herawaty, 2022; Sudaryo et al., 2018). Such practices may involve tax planning and the management of corporate transactions to minimize tax liabilities (Rachman et al., 2018). Although tax avoidance does not necessarily constitute a direct violation of tax regulations, it remains a concern because excessive tax avoidance may reduce potential state revenue and expose companies to regulatory scrutiny and reputational risks.

The property and real estate sector is one in which tax avoidance is particularly relevant. Substantial capital and long-term financing are generally needed by companies in this sector to develop projects such as residential areas, apartments, office buildings, and shopping centers. The large scale of investment required in these activities makes external financing, including debt, an important source of corporate funding. The use of debt is reflected in a company's leverage level and may affect its tax burden through the interest expenses arising from debt financing (Sarianti, 2024).

The prevalence of tax avoidance in the property and real estate sector also points to the ongoing difficulty of optimizing government tax income. The Directorate General of Taxes has identified potential tax revenue losses arising from property transactions that were not reported based on their actual transaction values. This condition indicates that the characteristics of property transactions may provide opportunities for companies or parties involved in transactions to manage their tax obligations. One case associated with the property sector involved PT Agung Podomoro Land Tbk in the context of the Panama Papers in 2016. This phenomenon demonstrates the importance of tax management in the property and real estate sector, particularly because of the substantial value and complexity of its transactions.

Tax avoidance can also be examined by means of the Cash Effective Tax Rate (CETR), a measure that contrasts cash income tax paid with pre-tax income. A lower CETR reflects a relatively modest proportion of cash taxes paid compared with pre-tax income, and such a pattern may signal more extensive tax avoidance (Januari & Suardikha, 2019). As reported by the Indonesia Stock Exchange, the average CETR among property and real estate firms stood at 0.187 in 2019 and dropped to 0.154 in 2020. It subsequently rose to 0.168 in 2021 and 0.172 in 2022, only to decline once more to 0.160 in 2023. Such shifts demonstrate how the proportion of cash taxes paid relative to pre-tax income varied across companies during the

study period, providing empirical evidence that tax management practices exist in the property and real estate sector.

A financial ratio known as leverage may be connected to tax avoidance, and it serves to measure the degree to which debt finances a company's assets as well as the firm's capacity to satisfy its short-term and long-term liabilities (Kasmir, 2016). Companies that finance their operations through debt incur interest expenses. Qualifying interest expenses may be deductible when determining taxable income under applicable tax regulations. The use of debt can therefore affect both the amount of taxable income and the tax burden the company bears (Pucantika & Wulandari, 2022).

Interest expenses stemming from debt financing offer a way to explain the relationship between leverage and tax avoidance. Greater interest expenses are generally incurred by companies with higher leverage. If tax regulations allow these interest expenses to be deducted, taxable income can be reduced, and the company's tax liability consequently diminished. This condition may provide companies with an incentive to utilize debt as part of their tax management strategy. Therefore, companies with higher leverage may have greater opportunities to reduce their tax burden through the tax-deductibility of interest expenses (Tanjaya & Nazir, 2021).

The property and real estate sector are important sectors to examine because its business characteristics require substantial funding and frequently involve external financing. The use of debt as a source of financing can increase interest expenses and subsequently influence the company's tax liability. Accordingly, leverage represents an important financial characteristic in examining corporate tax avoidance behavior in this sector.

Earlier studies have investigated the link between leverage and tax avoidance, but their conclusions have not been consistent. A significant positive effect of leverage on tax avoidance was absent in the work of Nurjanah and Nurdin (2021), whereas Miranda and Mulyati (2022) found that leverage did influence tax avoidance. Such divergent empirical evidence signals a research gap worth investigating further, particularly in the Indonesian property and real estate context. This research, grounded in the tax avoidance phenomenon, the distinctive features of the property and real estate sector, and the mixed findings of previous work, aims to examine the effect of leverage on tax avoidance among property and real estate companies listed on the Indonesia Stock Exchange over the 2019–2023 period.

2. Literature Review

2.1. Tax Avoidance

Tax avoidance refers to a lawful attempt by taxpayers to reduce or ease their tax liability, and it can be carried out by capitalizing on weaknesses or ambiguities within tax regulations (Mardiasmo, 2018; D. Sari, 2013). Tax avoidance can be achieved in three ways: by refraining from taxable activities, relocating business operations to jurisdictions with lower tax rates, and exploiting legal loopholes to ensure a transaction is not subject to tax (Sari, 2013). Tax avoidance in this research is gauged using the Cash Effective Tax Rate (CETR), calculated as cash paid in taxes divided by pre-tax profit (Halim et al., 2016). Greater tax avoidance is shown by a smaller CETR value, while reduced tax avoidance is shown by a larger CETR (Rosandi, 2022; D. Sari, 2013). The criteria used are as follows: a CETR < 25% is categorized as tax avoidance (dummy = 1), while a CETR > 25% is categorized as no tax avoidance (dummy = 0).

2.2. Leverage

Kasmir (2017) explains that the leverage ratio reflects how much of a company's assets are funded through debt along with the firm's ability to satisfy its short-term and long-term obligations. Greater leverage brings greater financial risk for the company because of fixed costs like interest and the obligation to repay debt. However, well-managed debt can increase returns for shareholders (Atmaja, 2018; Banias & Kuntadi, 2022; Hery, 2015). The extent to which debt finances a company's assets, and how reliant the company is on external sources of financing, is shown by the Debt-to-Asset Ratio (DAR), which this study uses to measure leverage. When the DAR value is higher, a larger share of assets is financed by debt, so the company's financial risk also tends to rise (Sonia & Khafid, 2020).

2.3. Framework of Thought

The Theory of Planned Behavior (TPB) posits that behavior is preceded by the intention to act, and that this intention is shaped by attitude, subjective norms, and perceived behavioral control (Ajzen, 1991). TPB can explain, in the context of corporate taxation, management's considerations when making tax-related decisions, including the decision to engage in tax avoidance. Leverage is one financial factor that may influence this decision. The extent to which a company's activities are financed by debt is reflected by leverage. Greater interest expenses result from higher leverage, and these expenses can reduce taxable income and consequently the company's tax burden. Therefore, management's considerations in determining the company's tax strategy may be influenced by the level of leverage.

The relationship between leverage and tax avoidance can therefore be explained through the decision-making perspective of TPB. When management considers the tax burden as a factor that may reduce the company's profitability, the company may have an incentive to select strategies that can legally minimize its tax liability. A higher level of leverage may provide a tax benefit through the deduction of interest expenses, which may influence management's attitude toward the use of debt as part of the company's financial strategy. In addition, management has control over decisions concerning the company's financing structure, including the proportion of debt used to finance its activities. Thus, leverage represents a financial condition that may be considered by management when making decisions concerning tax planning and tax avoidance.

The relationship between leverage and tax avoidance is supported by previous empirical studies. It was found by Abdullah (2020); Puteri (2018); Saputra et al. (2020); and Sunarsih et al. (2019) that leverage has a significant effect on tax avoidance. These findings indicate that the use of debt, together with the interest expenses it generates, may shape a company's tax burden and its tax-related decisions. Nevertheless, differing results have been documented in other research. Ariska et al. (2020) as well as Murkana and Putra (2020) found that leverage has no significant effect on tax avoidance. The relationship between leverage and tax avoidance remains relevant for further examination in different corporate contexts, as these differences in empirical findings indicate.

The Theory of Planned Behavior, together with earlier empirical results, leads to the expectation that leverage positively affects tax avoidance. Higher leverage generally brings about greater interest expenses, and such expenses are able to lower taxable income while providing a chance to reduce the company's tax burden. Viewed through the lens of managerial decision-making, this condition could heighten the incentive to implement tax avoidance strategies. Accordingly, the study posits that leverage positively influences tax avoidance in property and real estate companies traded on the Indonesia Stock Exchange.

H0: Leverage does not have a positive effect on Tax Avoidance.
H1: Leverage has a positive effect on Tax Avoidance.

3. Methods

This study applies simple linear regression as its analytical technique, since the aim is to examine the effect of a single independent variable (leverage) on a single dependent variable (tax avoidance) among property and real estate companies traded on the Indonesia Stock Exchange. This technique was adopted because it enables researchers to analyze, individually, both the direction and the magnitude of the effect that the independent variable has on the dependent variable. Based on the research data utilized, simple linear regression also enables testing of the significance of leverage's impact on tax avoidance. Nevertheless, the data structure and the fulfillment of relevant regression assumptions were also taken into account in choosing this method.

3.1. Research Design

A quantitative research approach grounded in the positivist paradigm is applied in this study. Under this approach, measurable financial data are utilized to empirically test the effect of leverage on tax avoidance. In this research, the independent variable is leverage and the dependent variable is tax avoidance. Companies in the property and real estate sector listed on the Indonesia Stock Exchange (IDX) during 2019–2023 constitute the focus of the study.

The quantitative approach relies on statistical analysis and numerical data obtained from company financial statements to examine the relationship between leverage and tax avoidance. To gauge the influence of leverage as the independent variable on tax avoidance as the dependent variable, the analysis uses a simple regression test. Both the direction and size of the relationship between the variables are estimated through this regression analysis, which also serves to test the proposed hypothesis.

3.2. Population and Sample

According to the data available throughout the observation period, the population of this study covers 92 property and real estate companies listed on the Indonesia Stock Exchange between 2019 and 2023. Sample selection was carried out using purposive sampling. This approach was employed to identify companies that fulfilled the established research criteria and held the data necessary for measuring the study's variables. Through this sampling process, 59 companies were selected as the sample. From 2019 to 2023, each company was observed for five consecutive years. Therefore, the final dataset consists of 295 firm-year observations, calculated as 59 companies multiplied by five years. The sample selection criteria should be presented explicitly in the manuscript as follows:

Table 1. Company Selection Criteria

No.	Criteria	Total
1.	Property and real estate companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023	92
2.	Property and real estate companies that did not submit complete financial statements to the Indonesia Stock Exchange during 2019-2023	(32)
3.	Property and real estate companies that went bankrupt during the study period	(1)
4.	Financial statements published in Indonesian Rupiah	0
5.	Real estate companies that were delisted from 2019 to 2023	0
Total		59
Number of Data Points (n)		59 x 5 = 295

Source: Authors' data processing (2026)

The initial population, according to Table 1, consisted of 92 property and real estate companies that were listed on the Indonesia Stock Exchange (IDX) throughout the 2019–2023 period. Thirty-two of these companies were excluded because complete financial statements were not published throughout the observation period, and one company was excluded owing to bankruptcy. No companies were excluded based on the reporting currency or delisting criteria. Consequently, 59 companies met all the predetermined sampling criteria and were included in the final sample. With an observation period of five years, the study obtained a total of 295 firm-year observations. These observations were subsequently used for the empirical analysis.

3.3. Data Type and Data Sources

Numerical figures extracted from the annual financial statements of property and real estate firms listed on the Indonesia Stock Exchange during 2019–2023 constitute the quantitative secondary data on which this research relies. The computation of leverage and tax avoidance drew on data sourced from the official Indonesia Stock Exchange website. A simple regression test is employed to analyze the collected data statistically and thereby assess how leverage influences tax avoidance.

3.4. Data Collection Technique

Documentation and literature study served as the methods for data collection. Gathering quantitative financial data from the annual financial statements of the sampled property and real estate companies was accomplished through the documentation technique. In order to obtain the financial information required for calculating the research variables, the financial statements were reviewed. The literature study was conducted by reviewing relevant books, journal articles, and previous empirical studies related to leverage and tax avoidance. The literature was used to establish the theoretical foundation, develop the research hypothesis, and support the interpretation of the empirical findings.

3.5. Variables and Measurement

This study involves one independent variable and one dependent variable, with leverage serving as the independent variable and tax avoidance as the dependent variable.

3.5.1. Leverage

The degree to which debt finances a company's assets, together with the firm's dependence on outside financing, is captured by leverage. This study measures leverage through the Debt to Asset Ratio (DAR), a ratio reflecting the portion of total assets funded by debt. When the DAR is higher, a greater share of assets is financed through debt. The formula below is used to compute the leverage ratio:

DAR = Total Debt / Total Assets

3.5.2. Tax Avoidance

Efforts by companies to manage their tax burden through the use of applicable tax provisions within the legal framework are represented by tax avoidance. Tax avoidance is measured in this study using the Cash Effective Tax Rate (CETR), as discussed in the literature review. The following formula should be stated for calculating CETR:

CETR = Tax Expense Paid / Pre-Tax Profit

Interpretation of the CETR measure should align with the measurement applied in the dataset. A lower proportion of cash taxes paid relative to the relevant pre-tax income measure

is generally indicated by a lower CETR, which is therefore associated with a higher level of tax avoidance.

3.6. Simple Regression Model

To examine how leverage affects tax avoidance, the data were analyzed using a simple regression test in EViews. The study covers observations from 59 property and real estate companies over the 2019–2023 period, yielding 295 observations in total. The regression analysis is specified as a simple regression model because one independent variable, leverage, and one dependent variable, tax avoidance, are included in the study. The following is the specification of the regression model:

$$TA = \alpha + \beta_1 LEV + \varepsilon$$

where:

TA = tax avoidance;
α = constant;
β_1 = regression coefficient of leverage;
LEV = leverage;
ε = error term.

How leverage and tax avoidance relate to each other, in terms of both direction and magnitude, is shown by the coefficient β_1. A positive coefficient means that greater leverage goes together with greater tax avoidance, while a negative coefficient signals an opposite relationship.

4. Results and Discussion

4.1. Research Results

4.1.1. Normality Test

A normality test serves to determine whether the dependent and independent variable data in the regression model fit a normal distribution, since normality is a prerequisite for a good model. In EViews, normality can be tested through histograms and the Jarque-Bera test. According to Gujarati and Porter (2013), Jarque-Bera (JB) is used to detect the normality of data based on residual Ordinary Least Square (OLS) on a large sample.

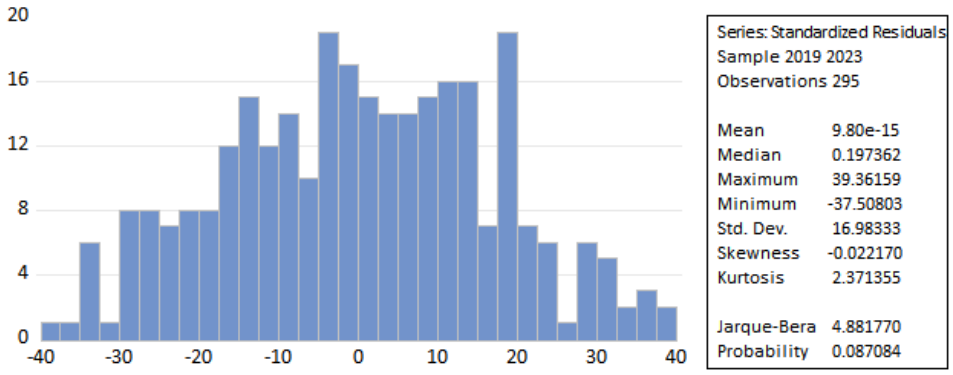


Figure 1. Normality Test
Source: Authors' data processing (2026)

Figure 1 reports a Jarque-Bera statistic of 4.881770 and a probability of 0.087084. The residuals can be treated as normally distributed given that the probability value is above 0.05.

4.1.2. Heteroscedasticity Test

The purpose of the heteroscedasticity test is to determine whether the residual differences between observations in the regression model are constant. Homoscedasticity occurs when there is a fixed residual variance; heteroscedasticity occurs when there is variation.

Table 2. Heteroscedasticity Test Results

Heteroskedasticity Test: White			
Null hypothesis: Homoskedasticity			
F-statistic	1.203499	Prob. F(9,285)	0.2925
Obs*R-squared	10.80105	Prob. Chi-Square(9)	0.2896
Scaled explained SS	5.016351	Prob. Chi-Square(9)	0.8329

Source: Authors' data processing (2026)

A heteroscedasticity test based on the White Test was performed to verify whether residual variance stayed constant across observations. The White Test's null hypothesis asserts that the regression model is homoscedastic. Table 2 shows probability values of 0.2925 for the F-statistic, 0.2896 for Obs*R-squared, and 0.8329 for Scaled explained SS. With all probability values above 0.05, the null hypothesis cannot be rejected, so the regression model exhibits no sign of heteroscedasticity.

4.1.3. Autocorrelation Test

Autocorrelation, according to Gujarati and Porter (2013), refers to the relationship between observations arranged by time (time series) or place (cross section). A good regression model should be free of autocorrelation, and one method for identifying it is the Breusch-Godfrey test (Lagrange Multiplier). As Gujarati and Porter (2013) explain, autocorrelation does not occur when the probability value exceeds 5%; rather, it occurs when the probability value falls below 5%.

Table 3. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:			
Null hypothesis: No serial correlation at up to 2 lags			
F-statistic	0.577368	Prob. F(2,289)	0.5620
Obs*R-squared	1.174018	Prob. Chi-Square(2)	0.5560

Source: Authors' data processing (2026)

Determining whether residuals are correlated from one observation to another is the aim of the autocorrelation test. Table 3 indicates that the Breusch-Godfrey Serial Correlation LM Test yields a probability value of 0.5560 for the Chi-Square statistic and 0.5620 for the F-statistic. With both values above 0.05, the regression model shows no sign of serial correlation.

4.1.4. Simple Regression Test

The purpose of this analysis is to determine the effect that leverage has on tax avoidance. The regression coefficient, t-statistic, and probability value serve to assess both the direction and the statistical significance of the relationship between leverage and tax avoidance. Each independent variable's regression coefficient, the significance level (p-value), and the t-statistic used for partial hypothesis testing will be shown in the resulting regression model

(Sunarto & Riduwan, 2017). By looking at the significance of each variable, it can be seen whether Leverage has a significant effect on Tax Avoidance or not.

Table 4. Regression Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob
Leverage	0.121399	0.042641	2.846968	0.0047

Source: Authors' data processing (2026)

To examine the effect of leverage on tax avoidance, regression analysis was conducted. Table 4 reveals a regression coefficient of 0.121399, a t-statistic of 2.846968, and a probability value of 0.0047 for leverage. Since the probability value is under 0.05, leverage significantly and positively affects tax avoidance, and H1 is thus accepted.

4.2. Discussion

The results indicate that leverage has a positive and significant effect on tax avoidance. A regression coefficient of 0.121399 is recorded for leverage, together with a t-statistic of 2.846968 and a probability value of 0.0047. Since the probability value is below 0.05, the hypothesis that leverage positively affects tax avoidance is accepted. As the positive relationship indicates, firms with higher leverage generally show greater tax avoidance. This relationship can be explained by the use of debt financing, as greater debt obligations and interest expenses are generally incurred by companies with higher leverage. When interest expenses meet the requirements for tax deductibility under applicable tax regulations, they may reduce taxable income and consequently affect the tax burden borne by the company.

The trade-off theory supports this finding, as it explains that tax benefits can arise from debt through the tax shield associated with deductible interest expenses. However, the use of debt also involves financial risks because companies remain responsible for interest and principal payments. The positive relationship identified in this study therefore suggests that the tax benefits associated with debt may be relevant to tax management decisions among property and real estate companies. This relationship is particularly relevant in the sector because substantial financing for long-term projects, including residential developments, apartments, and commercial buildings, is generally required. Debt financing may thus constitute an important component of capital structure, and higher leverage may increase the interest expense that can potentially affect taxable income, subject to applicable tax regulations.

This finding agrees with previous research cited in this study, which indicates a positive relationship between leverage and tax avoidance. According to Abdullah (2020), higher leverage levels are associated with companies being more active in pursuing tax avoidance strategies aimed at lessening financial burdens. Puteri (2018) also documented a positive relationship between leverage and tax avoidance aggressiveness, a link that may be connected to the deductibility of loan interest as a fiscal expense. E. D. P. Sari and Marsono (2020) added that highly leveraged companies tend to manage their tax liabilities efficiently to avoid disrupting operational liquidity. Research by Saputra et al. (2020) indicates that debt-based capital structures provide greater flexibility in managing corporate finances, including tax-related decisions. Meanwhile, Sunarsih et al. (2019) found that companies with limited cash flow due to high debt burdens may rely more on legal tax avoidance as a strategy to maintain financial viability.

The observation period of 2019-2023 also includes the COVID-19 pandemic, particularly 2020-2021, when many companies experienced financial and operational challenges. Debt financing may have remained an important source of corporate financing during this period.

However, this study does not specifically examine the COVID-19 pandemic as a moderating or mediating factor. Therefore, rather than serving as evidence of a specific COVID-19 effect, the positive relationship identified here should be read as the connection between leverage and tax avoidance in the sample and timeframe examined. Government tax policies and incentives during the observation period may also have influenced corporate tax management, although these factors are beyond the scope of the present model.

Tax authorities can address debt-based tax avoidance practices through monitoring, audits, interest expense deduction limits, and the application of the arm's-length principle. Such practices occur when companies utilize substantial debt to secure deductions against taxable income via interest expenses. Debt financing is widely used in the property and real estate sector, since companies need substantial capital for acquiring land, building residential units, and developing projects. Consequently, tax authorities must distinguish between debt genuinely utilized for business operations and debt arrangements designed to secure undue tax benefits. The first measure is limiting interest expense deductions through tax regulations. A key regulatory reference in Indonesia is Minister of Finance Regulation (PMK) Number 169/PMK.010/2015 concerning the debt-to-equity ratio for Income Tax calculations. This regulation stipulates a maximum debt-to-equity ratio of 4:1 for corporate taxpayers to which its provisions apply. Because of this limitation, companies cannot automatically deduct all borrowing costs that exceed the applicable thresholds. This mechanism aims to prevent companies from using excessive debt solely to reduce taxable profit.

The second measure is auditing debt transactions. Tax authorities can examine financial statements, loan agreements, interest payments, and the utilization of loan proceeds to verify that the debt is genuinely used for business activities. For property companies, audits may cover loans for land acquisition, residential or commercial building construction, or other project financing. If interest expenses are found that do not meet tax deduction requirements, tax authorities may apply fiscal adjustments in accordance with regulations. The examination must also ensure that borrowing costs are not improperly deducted in relation to income subject to final tax or income that is not subject to tax. The third measure is monitoring debt transactions with related parties. Loans between a company and parties with a special relationship, such as a parent company, subsidiary, or other entity within the same business group, carry the risk of profit shifting through unreasonable interest rates. Tax authorities may examine whether the interest rate, loan amount, term, and credit terms align with the arm's-length principle, and may adjust unreasonable rates based on relevant tax regulations.

The results should nevertheless be interpreted within the scope of the research sample and observation period. The findings do not imply that leverage is the only determinant of tax avoidance. Other financial, operational, and institutional factors beyond those examined in this study may also influence corporate tax behavior. Therefore, this positive and significant coefficient ought to be understood in light of the specific setting of property and real estate firms listed on the Indonesia Stock Exchange during 2019–2023. Managerially, the results suggest that leverage represents an important consideration in corporate tax management. Companies need to strike a careful balance between the possible tax advantages of debt financing and the financial risks stemming from interest and principal obligations. Tax management should remain consistent with applicable tax regulations to minimize risks, including increased scrutiny, penalties, and reputational consequences. Overall, leverage is significantly associated with tax avoidance in the property and real estate sector, highlighting the importance of capital structure and tax regulations in corporate tax management.

5. Conclusion

As empirical evidence reveals, leverage significantly and positively influences tax avoidance in property and real estate companies traded on the Indonesia Stock Exchange during 2019–2023. Higher levels of tax avoidance accompany higher leverage, a pattern reflected in the positive coefficient. Interest expenses stemming from debt financing, which may shrink taxable income when the pertinent tax provisions are fulfilled, provide a lens for understanding this link. The finding positions leverage as a notable financial factor tied to corporate tax management within the property and real estate sector. It supports the conclusion that companies must manage their use of debt optimally, balancing the advantages of financing against the risks entailed.

Leverage permits firms to finance project developments, grow business capacity, and benefit from interest expenses that are deductible from taxable income according to tax regulations. Excessive debt, on the other hand, can increase interest burdens, the risk of financial distress, and the potential for tax non-compliance. Therefore, corporate managers are advised to maintain a balanced capital structure between debt and equity, taking into account cash flow capacity, profitability levels, investment needs, and business risks. Management also needs to periodically evaluate debt ratios, interest-paying capacity, and the effectiveness of tax strategies.

Companies must also ensure that every financing transaction has a clear economic purpose, is supported by adequate documentation, and complies with tax regulations, including limitations on interest expense deductions and the arm's-length principle for related-party transactions. Financing decisions should not focus solely on short-term tax savings but should also consider business sustainability, corporate reputation, and legal certainty. In this way, leverage can serve as a productive financing instrument without excessively increasing financial or tax risks.

The key managerial recommendation is that companies should optimize debt usage based on business needs and financial capacity, rather than solely to achieve tax savings. Achieving this balance is expected to enhance financing efficiency, ensure tax compliance, and support the sustainable growth of property and real estate companies. However, the specific context of the companies and observation period examined in this study should frame the interpretation of this finding. Leverage is not implied to be the sole determinant of tax avoidance, as other financial, operational, and institutional factors may also influence corporate tax behavior. Further research involving additional determinants, broader industry coverage, and different observation periods is therefore needed to provide a more comprehensive understanding of the relationship between leverage and tax avoidance.

5.1. Conflict of Interest Statement

The authors declare no financial or personal relationships that could reasonably be perceived as competing interests in connection with this publication.

5.2. Author Contributions

I.S.L.B.: Conceptualization, Methodology, Formal Analysis, Software, Visualization, Writing – Original Draft.
S.S.: Investigation, Data Curation, Validation, Writing – Review & Editing.
P.S.: Supervision, Resources, Validation, Writing – Review & Editing.
Y.M.: Supervision, Methodology, Validation, Writing – Review & Editing.

5.3. Funding Statement

No funding was received for this research from any public, commercial, or not-for-profit funding body.

5.4. Informed Consent

Not applicable. The study analyses publicly available annual financial statements of listed companies and involves no human participants and no collection of personal data.

5.5. Ethical Approval

Not applicable. The research is a quantitative analysis of published corporate financial statements and stock exchange records and involves no human or animal subjects, no fieldwork, and no primary data collection requiring ethical clearance.

5.6. Data Availability

The compiled dataset, including the calculated Debt-to-Asset Ratio and Cash Effective Tax Rate values for each firm-year, is available from the corresponding author [I.S.L.B.] on reasonable request.

5.7. Declaration of Generative AI and AI-assisted Technologies

The authors employed Claude (Anthropic) and ChatGPT during the writing of this manuscript for the purposes of language editing and enhancing clarity. All content generated with tool assistance underwent critical review and revision by the authors so that factual accuracy, alignment with the EViews output, and adherence to academic writing conventions could be guaranteed. The authors bear full responsibility for the integrity and content of this manuscript.

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