International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

# Corporate Tax Aggressiveness In Indonesian Mining Companies: The Roles Of Capital Intensity, Leverage, Related-Party Transactions, And Firm Size

**Elisabet[1], Sri Yani Kusumastuti[2]**

[1,2]Undergraduate Applied Study Programme in Finance, Faculty of Economics and Business, Universitas Trisakti

Corresponding author: sriyani.k@trisakti.ac.id

**Abstract**

*Corporate tax aggressiveness remains an important issue in Indonesia because differences between accounting and taxable income may affect corporate tax payments and the effectiveness of tax collection. This study examines the relationship between capital intensity, leverage, related-party transaction intensity, and firm size and corporate tax aggressiveness among mining companies listed on the Indonesia Stock Exchange during 2020–2024. Corporate tax aggressiveness is measured using the Book Tax Difference (BTD). Using a quantitative approach, the study employs secondary data from corporate annual financial statements and analyzes panel data using a Fixed Effect Model with cross-section weighted Generalized Least Squares. The findings indicate that capital intensity and leverage are not significantly associated with corporate tax aggressiveness. In contrast, related-party transaction intensity and firm size are positively and significantly associated with corporate tax aggressiveness. These findings suggest that organizational scale and the intensity of related-party financial relationships are more closely associated with differences between accounting and taxable income than asset intensity or debt financing in the sampled mining companies. The findings provide implications for tax authorities in developing risk-based monitoring of large firms and related-party transactions and for companies in strengthening tax governance, transparency, and compliance. However, the positive association between related-party transaction intensity and BTD should not be interpreted as direct evidence of transfer-pricing manipulation or profit shifting.*

**Keywords: Corporate Tax Aggressiveness; Book Tax Difference; Capital Intensity; Leverage; Related-Party Transactions; Firm Size**



Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

## INTRODUCTION

Tax revenue plays a central role in Indonesia's fiscal system because it constitutes a major source of government revenue used to finance public expenditure, infrastructure development, and economic programs. According to the 2025 State Budget (APBN) report, taxes accounted for a substantial proportion of total state revenue, demonstrating the importance of corporate and individual tax compliance to fiscal sustainability. However, Indonesia continues to face challenges in strengthening its tax capacity, as reflected in its relatively low tax ratio compared with several other countries in the region. This situation raises concerns about the factors that influence corporate tax payments and the extent to which firms undertake tax-planning strategies that reduce their tax liabilities.

Indonesia applies a self-assessment taxation system in which taxpayers are responsible for calculating, paying, and reporting their own tax liabilities (Purnomo, 2024). Although the system is designed to promote voluntary compliance, the discretion provided to taxpayers may also create opportunities for firms to engage in sophisticated tax planning. Corporate tax aggressiveness refers broadly to strategies undertaken by firms to reduce their tax liabilities, ranging from tax planning and avoidance within the boundaries of applicable regulations to practices that may violate tax provisions (Amalia, 2021; Aulia & Mahapudin, 2020). Tax aggressiveness is therefore an important issue from both fiscal and corporate perspectives because aggressive tax planning may reduce current tax liabilities while potentially creating regulatory, financial, and reputational risks for firms.

The relationship between firms and tax authorities can be viewed through agency theory. Agency theory emphasizes differences in interests and information between principals and agents. In the taxation context, the government seeks to maintain tax revenue, whereas corporate managers may perceive taxes as a cost that reduces after-tax income and profitability. Managers may therefore have incentives to adopt tax-planning strategies that minimize tax liabilities while maintaining satisfactory financial performance. Information asymmetry may further increase managerial discretion because managers generally possess more detailed information about corporate transactions and accounting policies than external stakeholders (Mutia et al,2018; Endaryati et al, 2021). Corporate tax aggressiveness can therefore be understood as a potential outcome of the interaction between managerial incentives, information asymmetry, and the firm's ability to manage its tax position.

The issue is particularly relevant in Indonesia's mining industry. Mining companies generally require substantial investments in machinery, infrastructure, exploration activities, and production facilities. The sector is also characterized by complex ownership structures, financing arrangements, and relationships with affiliated entities.


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

These characteristics may create different tax-planning incentives from those found in less capital-intensive industries. The importance of the mining sector to the Indonesian economy, combined with continuing concerns regarding tax collection and related-party transactions, makes mining companies an important setting for examining corporate tax aggressiveness.

Corporate tax aggressiveness can be measured through several indicators, including effective tax rates and book-tax differences. This study uses the Book Tax Difference (BTD), which reflects the difference between accounting income and taxable income. BTD is useful for identifying differences between financial reporting and tax reporting outcomes and has been employed as a proxy for corporate tax aggressiveness (Firmansyah & Triastie, 2021). However, BTD should not be interpreted as direct evidence of tax avoidance, tax evasion, or other unlawful practices because differences between accounting and taxable income can also arise from legitimate differences in accounting and tax rules. Accordingly, this study uses BTD as an indicator of corporate tax aggressiveness rather than as direct evidence of illegal tax behavior.

Several firm characteristics may explain differences in corporate tax aggressiveness. This study focuses on capital intensity, leverage, related-party transaction intensity, and firm size. Previous research has produced inconsistent findings regarding the relationships between these variables and tax aggressiveness. These inconsistencies provide an empirical basis for further investigation, particularly in the context of Indonesian mining companies.

Capital intensity reflects the proportion of a firm's resources invested in fixed assets. This variable is particularly relevant in the mining industry because mining operations require substantial investment in machinery, equipment, infrastructure, and other long-term productive assets. Fixed assets are generally subject to depreciation, and depreciation expenses may reduce taxable income. Consequently, firms with higher capital intensity may obtain greater depreciation-related tax benefits.

The relationship between capital intensity and tax aggressiveness can be explained through the tax-shield mechanism. Investment in depreciable fixed assets may reduce taxable income through depreciation deductions without necessarily generating an equivalent current-period cash expenditure. From this perspective, firms with greater capital intensity may have greater opportunities to reduce taxable income.

Empirical findings, however, are inconsistent. Rosadani & Wulandari (2023) reported a positive relationship between capital intensity and tax aggressiveness, arguing that greater fixed-asset investment increases depreciation expenses and may reduce taxable income. Similar positive relationships have been reported by Fitriani & Suhendi (2025), Rahmawati & Jaeni (2022), and Mulya & Anggraeni (2022). In contrast, Prastiwi


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

& Waladi (2022) found a negative relationship, while Prasetyo & Wulandari (2021) found no significant effect.

The inconsistent findings suggest that capital intensity may not have the same implications across industries. In mining companies, fixed-asset investment is often determined by operational requirements, exploration activities, mine development, and production capacity. Consequently, high capital intensity may reflect the nature of the business rather than an explicit tax-planning strategy. Nevertheless, because depreciation provides a potential tax shield, a positive relationship between capital intensity and corporate tax aggressiveness is theoretically expected.

Leverage represents the extent to which firms rely on debt financing relative to equity. Debt financing may influence corporate tax positions because interest expenses may be deductible for tax purposes under applicable regulations. The resulting reduction in taxable income constitutes a tax-shield benefit. The relationship between leverage and tax aggressiveness can be explained by trade-off theory. Firms may use debt because interest deductibility provides tax benefits, while simultaneously considering the financial risks associated with excessive borrowing. From this perspective, higher leverage may create stronger incentives to utilize debt-related tax benefits and may therefore be associated with higher tax aggressiveness.

Previous empirical evidence provides mixed results. Cahyadi et al (2020), Hidayat & Fitria (2018), Abidin (2018), and Putri & Yuliafitri (2024) reported positive relationships between leverage and tax aggressiveness. These findings are consistent with the argument that interest deductions may reduce taxable income. However, Herlinda & Rahmawati (2021) reported a negative relationship, while Prasetyo & Wulandari (2021) found no significant relationship.

The mixed evidence suggests that leverage may serve multiple corporate purposes beyond tax planning. In the mining industry, debt financing may primarily be used to finance capital expenditure, production activities, and working capital. During periods of economic uncertainty, firms may also prioritize liquidity and debt servicing rather than maximizing tax benefits. Nevertheless, based on the tax-shield mechanism and trade-off perspective, this study expects leverage to have a positive relationship with corporate tax aggressiveness.

Related-party transactions represent an important aspect of corporate financial management and may have implications for corporate taxation. Transfer pricing refers to the determination of prices in transactions between related entities (Pohan, 2018). Such transactions may involve the sale and purchase of goods, services, financing, receivables, liabilities, and other economic resources between affiliated companies.

From an agency perspective, related-party transactions may provide managers or controlling parties with greater discretion over the allocation of income, expenses, assets,


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

and liabilities within a corporate group. Information asymmetry may make it more difficult for external stakeholders to evaluate the economic substance and fairness of such transactions. In multinational groups, differences in tax environments across jurisdictions may further increase the importance of related-party transactions in corporate tax planning (Hutomo et al., 2021).

Previous studies generally indicate a positive relationship between transfer pricing and tax aggressiveness, although the evidence remains inconsistent. (Wenten & Rahayu, 2025), Al Hasyim et al (2023), Hidayat & Wijaya (2021), Chrisandy & Simbolon (2022), and Isnaini et al (2024) reported positive relationships. Conversely, Manullang & Karundeng (2023) reported a negative effect, while Lestari & Syofyan (2023) found no significant relationship.

In the present study, the variable originally referred to as transfer pricing is measured by the proportion of receivables from related parties relative to total receivables. Because this measure does not directly observe the prices applied in related-party transactions, it is more appropriately interpreted as related-party transaction intensity (RPT). A higher proportion of related-party receivables indicates greater exposure to related-party financial relationships, which may be associated with greater differences between accounting and taxable income.

Importantly, a positive association between RPT and BTD should not automatically be interpreted as evidence of transfer-pricing manipulation or profit shifting. Direct evidence of such practices would require more detailed information concerning transaction prices, jurisdictions, transaction types, and compliance with the arm's-length principle. Therefore, the present study focuses on the association between related-party transaction intensity and BTD.

Firm size represents the scale of a firm's economic resources and organizational operations. Larger companies generally possess greater assets, more complex organizational structures, broader business activities, and greater access to professional expertise. These characteristics may affect the firm's ability to undertake sophisticated tax planning. Agency theory suggests that larger firms may have greater organizational resources and managerial capabilities to develop complex tax-planning strategies. Large firms may employ tax specialists, accountants, consultants, and legal professionals who possess expertise in identifying tax-planning opportunities. Greater organizational complexity may also create more differences in the timing and allocation of income and expenses between accounting and tax reporting.

Previous studies have generally reported positive relationships between firm size and tax aggressiveness. Mayndarto (2022), Rosadani & Wulandari (2023), Anggraeni et al. (2025), Sulaeman (2021), Saputra et al. (2022), and Sabita & Mildawati (2018) found positive relationships between firm size and tax avoidance or tax aggressiveness. These


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

findings suggest that larger firms may have greater resources and capabilities to undertake sophisticated tax planning.

Nevertheless, firm size may also increase regulatory visibility and external scrutiny. Larger firms may be subject to greater monitoring from tax authorities, investors, creditors, and the public. Such scrutiny may constrain aggressive tax practices. Consistent with this argument, Utomo & Fitria (2020) found a negative relationship, while Prasetyo & Wulandari (2021) reported no significant effect.

Despite these competing arguments, this study expects the resource and organizational-complexity effects of firm size to dominate. Larger mining companies generally operate with greater organizational complexity and possess more resources for financial and tax management. Therefore, larger firms are expected to exhibit higher levels of corporate tax aggressiveness. Although previous studies have examined capital intensity, leverage, transfer pricing, and firm size as potential determinants of corporate tax aggressiveness, their findings remain inconsistent. These inconsistencies suggest that the determinants of tax aggressiveness may depend on industry characteristics, measurement approaches, sample composition, and observation periods.

This study addresses three related gaps. First, relatively limited evidence focuses specifically on Indonesian mining companies, despite the industry's capital-intensive characteristics and complex related-party relationships. Second, previous studies have produced mixed evidence regarding the role of asset structure, financing structure, related-party transactions, and firm size in explaining tax aggressiveness. Third, the 2020–2024 period provides a distinctive setting because it encompasses pandemic-related economic disruption and subsequent recovery, which may have affected corporate investment, financing, and tax-management decisions.

This study therefore examines the relationship between capital intensity, leverage, related-party transaction intensity, and firm size and corporate tax aggressiveness among mining companies listed on the Indonesia Stock Exchange. The study contributes to the literature by providing sector-specific evidence and by examining several firm characteristics within a common panel-data framework.

Based on the theoretical arguments and previous empirical evidence, the study proposes four hypotheses: capital intensity is expected to have a positive effect on corporate tax aggressiveness; leverage is expected to have a positive effect; related-party transaction intensity is expected to have a positive effect; and firm size is expected to have a positive effect.

## RESEARCH METHOD

This study employs a quantitative research approach to examine the relationship between capital intensity, leverage, related-party transaction intensity, and firm size and


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

corporate tax aggressiveness among mining companies listed on the Indonesia Stock Exchange during 2020–2024. The study uses secondary panel data obtained from publicly available annual financial statements of the sampled companies. The use of panel data combines cross-sectional observations across firms with time-series observations across years, allowing the analysis to account for unobserved firm-specific characteristics that may influence corporate tax behavior.

The population consists of mining companies listed on the Indonesia Stock Exchange during the observation period. The sample was selected using purposive sampling based on predetermined criteria. Companies were included if they were continuously listed during 2020–2024 and were not delisted during the observation period, published complete annual financial statements, did not undertake major corporate actions such as mergers or acquisitions, and did not report losses during the observation period. Based on these criteria, 11 companies were included in the final sample, resulting in 55 firm-year observations. The relatively small and sector-specific sample means that the findings should be interpreted primarily as evidence for the sampled mining companies rather than as evidence that can be generalized to all Indonesian firms.The corresponding purposive-sampling screening stages are summarized in Table 1, and the resulting sample firms are listed in Table 2.

Table 1. Sample Selection Process

| Sample Selection Criteria | Number of Firms |
|---|---|
| Mining companies listed on the Indonesia Stock Exchange during 2020–2024 and not delisted during the period (initial population) | 42 |
| Less: firms not publishing complete annual financial statements related to the research variables during 2020–2024 | (3) |
| Less: firms undertaking corporate actions such as mergers or acquisitions during 2020–2024 | (10) |
| Less: firms reporting losses during 2020–2024 | (18) |
| Final sample | 11 firms |
| Observation years | 5 (2020–2024) |
| Total firm-year observations | 55 |

*Source : Processeed by the researcher based on various sources*

Excluding loss-making firms without a robustness check may introduce sample-selection bias, since loss-making firms could plausibly exhibit different tax-aggressiveness patterns. Reporting, as a robustness check, whether re-including loss-


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

making firms (or estimating a separate model for that subsample) materially changes the coefficients on RPT and firm size is recommended before final submission.

Table 2. List of Sample Mining Companies

| No. | Code | Company Name |
|---|---|---|
| 1 | PTBA | Bukit Asam Tbk |
| 2 | SGER | Sumber Global Energy Tbk |
| 3 | TCPI | Transcoal Pacific Tbk |
| 4 | ANTM | Aneka Tambang Tbk |
| 5 | INCO | Vale Indonesia Tbk |
| 6 | MBAP | Mitrabara Adiperdana Tbk |
| 7 | PTIS | Indo Straits Tbk |
| 8 | BESS | Batulicin Nusantara Maritim Tbk |
| 9 | TEBE | Dana Brata Luhur Tbk |
| 10 | GEMS | Golden Energy Mines Tbk |
| 11 | DWGL | Dwi Guna Laksana Tbk |

*Source : Processeed by the researcher based on various sources*

The data were obtained from annual financial statements published through the official Indonesia Stock Exchange website and the respective corporate websites. The information collected includes accounting income, taxable or fiscal income, net fixed assets, total assets, total liabilities, total equity, related-party receivables, and total receivables. These data were used to construct the dependent and explanatory variables.

Corporate tax aggressiveness is measured using the Book Tax Difference (BTD), which represents the difference between accounting income and taxable income. BTD is used as a proxy for corporate tax aggressiveness because it captures the divergence between financial accounting outcomes and taxable income (Firmansyah & Triastie, 2021). The BTD measure is calculated as the difference between accounting income and taxable income. However, BTD should not be interpreted as direct evidence of tax avoidance, tax evasion, or other unlawful tax practices because differences between accounting and taxable income may also arise from legitimate differences between accounting standards and tax regulations. The final empirical analysis should use the same BTD formulation as that applied in the original EViews dataset to ensure consistency between the reported descriptive statistics and regression results.

Capital intensity (CAPINT) is measured as the ratio of net fixed assets to total assets. This measure reflects the proportion of the firm's resources invested in fixed assets and follows the approach used by Soelistiono & Adi (2022). Leverage (DER) is measured as total liabilities divided by total equity, following Kurniasih & Sari (2013). Firm size (SIZE) is measured using the natural logarithm of total assets, following Aminah


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

&Wuryani (2021). The exact measurement formulas for all explanatory variables are summarized in Table 3.

Table 3. Variable Measurement

| Variable | Formula |
|---|---|
| BTD | (Accounting Income − Taxable Income) / Total Assets |
| CAPINT | (Net Fixed Assets / Total Assets) × 100% |
| DER | (Total Liabilities / Total Equity) × 100% |
| TP | (Related-Party Receivables / Total Receivables) × 100% |
| SIZE | Natural logarithm of Total Assets, LN(Total Assets) |

*Source : Processeed by the researcher based on various sources*

The variable originally identified as transfer pricing (TPR) is measured as the proportion of receivables from related parties relative to total receivables. Because this measure captures the intensity of related-party receivables rather than directly observing the prices applied in intra-group transactions, the variable is referred to in the revised analysis as related-party transaction intensity (RPT). A higher RPT indicates a greater proportion of receivables involving related parties. Accordingly, this variable should be interpreted as an indicator of related-party financial relationships rather than direct evidence of transfer-pricing manipulation or profit shifting.

The panel regression model is specified as follows:

$$\mathbf{BTD_{it} = \beta 0 + \beta 1\ CAPINT_{it} + \beta 2\ DER_{it} + \beta 3\ RPT_{it} + \beta 4\ SIZE_{it} + \mu_t + e_{it}}$$

Where $\mathbf{BTD_{it}}$ represents corporate tax aggressiveness for firm (i) in year (t), $\mathbf{CAPINT_{it}}$ represents capital intensity, $\mathbf{DER_{it}}$ represents leverage, $\mathbf{RPT_{it}}$ represents related-party transaction intensity, $\mathbf{SIZE_{it}}$ represents firm size, $\boldsymbol{\mu_t}$ represents firm-specific effects, and $\mathbf{e_{it}}$ represents the error term. The expected relationships are positive for all four explanatory variables.

Panel model selection was conducted by comparing the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The Chow test was used to determine whether FEM was preferable to CEM, while the Hausman test was used to determine whether FEM was preferable to REM. The original analysis reports a Chow test probability of 0.0000 and a Hausman test probability of 0.0445, leading to the selection of the Fixed Effect Model.

Following model selection, the fixed-effect specification was estimated using cross-section weighted Generalized Least Squares (GLS) to address heterogeneity across firms and improve the reliability of statistical inference. The original study states that cross-section weighted GLS was applied where heteroskedasticity across cross-sectional units was detected. The empirical analysis was conducted using EViews.


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

The statistical significance of the individual explanatory variables was evaluated using the t-test. A probability value below 0.05 was considered evidence of a statistically significant relationship. The joint significance of the explanatory variables was evaluated using the F-test, while the adjusted R-squared was used to assess the proportion of variation in BTD captured by the specified model. The original estimation produced a statistically significant F-test and an adjusted R-squared of 0.716907.

Because the study uses a relatively small panel and proxy measures for both corporate tax aggressiveness and related-party transaction intensity, the empirical results are interpreted as statistical associations within the specified model rather than definitive evidence of causal relationships. In particular, a significant relationship between RPT and BTD does not by itself establish transfer-pricing manipulation or profit shifting. More direct evidence would require transaction-level information concerning the nature, pricing, jurisdiction, and arm's-length characteristics of related-party transactions.

## RESULTS AND DISCUSSION

The study examines the relationship between capital intensity, leverage, related-party transaction intensity, and firm size and corporate tax aggressiveness among mining companies listed on the Indonesia Stock Exchange during 2020–2024. The analysis is based on 55 firm-year observations from 11 mining companies. Corporate tax aggressiveness is measured using the Book Tax Difference (BTD), while capital intensity, leverage, related-party transaction intensity, and firm size are measured using the indicators described in the research methodology.

Table 4. Descriptive Statistics

| Variable | Mean | Median | Maximum | Minimum | Std. Dev. |
|---|---|---|---|---|---|
| **BTD** | 0.4985 | -0.5395 | 12.2874 | -11.8917 | 4.48200 |
| **CAPINT** | 34.7874 | 22.0976 | 78.7159 | 0.57994 | 28.5810 |
| **DER** | 138.7494 | 72.2073 | 1079.066 | 11.1498 | 217.9859 |
| **RPT** | 26.0791 | 8.0992 | 100.0000 | 0.0000 | 34.0376 |
| **SIZE** | 29.2600 | 28.9747 | 31.5694 | 26.9348 | 1.55744 |

*Source: Authors' calculation using EViews 9.*

As shown in Table 1, BTD has a mean of 0.4985 and a standard deviation of 4.4820, indicating considerable variation in the difference between accounting and taxable income across firms and years. The minimum and maximum values also demonstrate substantial dispersion in BTD. This variation provides an empirical basis for examining whether firm-specific characteristics are associated with differences in corporate tax aggressiveness.



Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

Capital intensity has a mean of 34.7874% and a standard deviation of 28.5810%, indicating substantial differences in the proportion of fixed assets across the sampled mining companies. This variation is consistent with differences in exploration activities, production capacity, mine development, and infrastructure requirements. Leverage exhibits even greater dispersion, with an average DER of 138.7494% and a standard deviation of 217.9859%. The maximum value indicates that some firms rely substantially more on liabilities relative to equity than others. Related-party transaction intensity has a mean of 26.0791% and ranges from zero to 100%, suggesting considerable differences in the intensity of related-party receivables across firms. In contrast, firm size has a relatively low standard deviation of 1.55744, indicating that the asset scale of the sampled firms is comparatively homogeneous. Before estimating the regression model, panel model selection was conducted using the Chow and Hausman tests. The results are presented in Table 5.

Table 5. Chow and Haisman Test

| Test | Statistic | Probability | Model Selection |
|---|---|---|---|
| **Chow Test** | 42.40343 | 0.0000 | Fixed Effect Model |
| **Hausman Test** | 9.771616 | 0.0445 | Fixed Effect Model |

*Source: Authors' calculation using EViews 9.*

The Chow test produces a probability value of 0.0000, indicating that the Fixed Effect Model is preferred to the Common Effect Model. The Hausman test produces a probability value of 0.0445, which is below the 5% significance level and therefore supports the Fixed Effect Model over the Random Effect Model. These results indicate that unobserved firm-specific characteristics are relevant to the model and should be controlled for in the estimation. The final regression is therefore estimated using the Fixed Effect Model with cross-section weighted Generalized Least Squares to address differences in error variance across firms. The original analysis reports the use of this estimation procedure to improve the reliability of statistical inference.

The regression results indicate that the explanatory variables are jointly significant in explaining variation in corporate tax aggressiveness. The significant F-statistic indicates that capital intensity, leverage, related-party transaction intensity, and firm size collectively provide relevant information for explaining variation in BTD. The adjusted R-squared indicates that the model captures a substantial proportion of the variation in the dependent variable, although other factors not included in the model may also contribute to differences in corporate tax aggressiveness.


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

Table 6. The estimation results

| Variable | Coefficient | Probability | Interpretation |
|---|---|---|---|
| **C** | -85.9703 | 0.0000 | — |
| **CAPINT** | 0.023791 | 0.7051 | Positive, not significant |
| **DER** | 0.006549 | 0.3317 | Positive, not significant |
| **RPT** | 0.059477 | 0.0032 | Positive, significant |
| **SIZE** | 2.914780 | 0.0000 | Positive, significant |
| R-squared | **0.790302** | | |
| Adjusted R-squared | **0.716907** | | |
| F-statistic | **10.76788** | **0.0000** | **Significant** |

*Source: Authors' calculation using EViews 9.*

Capital intensity has a positive coefficient but is statistically insignificant. The coefficient of 0.023791 and probability value of 0.7051 indicate that variations in the proportion of fixed assets are not systematically associated with differences in BTD among the sampled mining companies. Therefore, the hypothesis predicting a positive relationship between capital intensity and corporate tax aggressiveness is not supported.

This finding suggests that substantial fixed-asset investment in mining companies does not necessarily translate into more aggressive tax behavior. Mining companies require heavy machinery, production facilities, exploration equipment, and infrastructure as part of their normal operations. Consequently, the level of fixed assets may primarily reflect operational and production requirements rather than deliberate tax-planning decisions. Although depreciation can provide a tax shield, the results indicate that the depreciation-related mechanism is not sufficiently strong to explain differences in BTD within the sample.

The finding is consistent with Prasetyo and Wulandari (2021), who found no significant relationship between capital intensity and tax aggressiveness, but differs from the positive relationships reported by Hidayat & Fitria (2018) and Rosadani & Wulandari (2023). Differences in industry characteristics, observation periods, sample composition, and tax-aggressiveness measures may explain the divergent findings. In the mining context, the operational importance of fixed assets may reduce the extent to which capital intensity can be interpreted as an indicator of tax-planning behavior.

Leverage also has a positive but statistically insignificant coefficient. The estimated coefficient of 0.006549 and probability value of 0.3317 indicate that leverage does not have a statistically significant relationship with corporate tax aggressiveness. Accordingly, the hypothesis predicting a positive relationship between leverage and BTD is not supported.

The positive direction is consistent with the tax-shield argument because interest expenses associated with debt may reduce taxable income. However, the lack of


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

statistical significance indicates that this mechanism does not systematically explain differences in BTD among the sampled firms. Debt financing in the mining sector may primarily reflect the need to finance capital-intensive operations, investment projects, and working capital rather than a deliberate attempt to obtain tax benefits.

This finding is consistent with Prasetyo & Wulandari (2021), but differs from studies such as Cahyadi et al. (2020), which reported a positive relationship. The differences may reflect variations in industry characteristics, economic conditions, financing structures, and observation periods. During periods of economic uncertainty, firms may also place greater emphasis on liquidity and financial stability than on maximizing the tax benefits of debt financing. The present evidence therefore does not support the proposition that more highly leveraged mining companies systematically exhibit higher levels of corporate tax aggressiveness.

In contrast, related-party transaction intensity has a positive and statistically significant relationship with corporate tax aggressiveness. The coefficient of 0.059477 and probability value of 0.0032 indicate that firms with a higher proportion of related-party receivables tend to exhibit higher BTD, after controlling for capital intensity, leverage, and firm size. Therefore, the hypothesis predicting a positive relationship between related-party transaction intensity and corporate tax aggressiveness is supported.

This finding is consistent with the agency perspective, which suggests that related-party transactions may involve greater information asymmetry and managerial discretion. Transactions between affiliated entities can be more complex than transactions with independent parties, making it more difficult for external stakeholders to assess their economic substance and financial implications. Greater related-party transaction intensity may therefore be associated with greater differences between accounting and taxable income.

The finding is consistent with previous studies reporting positive relationships between transfer pricing and tax aggressiveness, including Wenten & Rahayu (2025), Al Hasyim et al. (2023), Hidayat & Wijaya (2021), Chrisandy & Simbolon (2022), and Isnaini et al (2024). However, other studies have reported negative or insignificant relationships, suggesting that the relationship may depend on industry characteristics, measurement approaches, and institutional conditions.

The interpretation of this finding requires particular caution. In this study, related-party transaction intensity is measured as the proportion of receivables from related parties relative to total receivables. This measure captures the intensity of related-party financial relationships but does not directly observe the prices applied to transactions between affiliated entities. Therefore, the positive relationship with BTD should not be interpreted as direct evidence of transfer-pricing manipulation or profit shifting. Rather, the finding indicates that greater related-party transaction intensity is statistically


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

associated with greater differences between accounting and taxable income. Direct investigation of transfer-pricing manipulation or profit shifting would require more detailed information concerning transaction prices, transaction types, jurisdictions, and compliance with the arm's-length principle. The original measurement of this variable is based on related-party receivables relative to total receivables.

Firm size has a positive and statistically significant relationship with corporate tax aggressiveness. The coefficient of 2.914780 and probability value of 0.0000 indicate that larger firms tend to exhibit higher BTD, holding the other variables constant. Thus, the hypothesis predicting a positive relationship between firm size and corporate tax aggressiveness is supported.

The positive relationship may be explained by differences in organizational resources and complexity. Larger firms generally possess greater financial resources, more sophisticated organizational structures, and greater access to accounting, tax, and legal expertise. These characteristics may increase their capacity to undertake sophisticated tax-planning activities and manage differences between accounting and taxable income.

The result is consistent with Mayndarto (2022), Rosadani & Wulandari (2023), Anggraeni et al. (2025), Sulaeman (2021), Saputra et al. (2022), and Sabita & Mildawati (2018), who reported positive relationships between firm size and tax avoidance or tax aggressiveness. However, the finding differs from Utomo & Fitria (2020), who reported a negative relationship, and Prasetyo & Wulandari (2021), who found no significant relationship. These differences suggest that firm size may operate through competing mechanisms. Larger firms may possess greater resources for tax planning, but they may also face greater regulatory scrutiny and reputational pressure. The positive relationship observed in this study suggests that the resource and organizational-complexity mechanisms are more strongly associated with BTD within the sampled mining companies.

Overall, the results indicate that the determinants of corporate tax aggressiveness are not uniform across the characteristics examined. Capital intensity and leverage do not exhibit statistically significant relationships with BTD, whereas related-party transaction intensity and firm size exhibit positive and statistically significant relationships. These findings suggest that organizational scale and the intensity of related-party financial relationships may be more closely associated with differences between accounting and taxable income than asset structure and debt financing in the sampled mining companies.

The results also have implications for tax administration. Firm size and related-party transaction intensity may be considered as potential indicators in risk-based tax monitoring. However, these characteristics should be treated as risk indicators rather


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

than evidence of tax non-compliance. A higher BTD or greater intensity of related-party transactions requires further examination of the underlying transactions, accounting treatments, and tax positions before any conclusion regarding non-compliance can be made. For companies, the findings emphasize the importance of maintaining appropriate documentation, transparency, and governance over related-party transactions and tax-planning activities.

The findings should be interpreted in light of the limitations of the study. The relatively small sector-specific sample limits the generalizability of the results to other industries. In addition, BTD may reflect both tax-planning behavior and legitimate differences between accounting and tax rules. The measurement of related-party transaction intensity also does not directly capture transfer-pricing practices. Future research should therefore consider broader samples, alternative measures of tax aggressiveness, and more direct measures of related-party transactions and transfer pricing to further examine the mechanisms underlying corporate tax behavior.

## CONCLUSION

This study examines the relationship between capital intensity, leverage, related-party transaction intensity, and firm size and corporate tax aggressiveness in Indonesian mining companies. Corporate tax aggressiveness is measured using the Book Tax Difference (BTD). The findings show that capital intensity and leverage are not significantly associated with corporate tax aggressiveness. This suggests that the proportion of fixed assets and the use of debt financing do not systematically explain differences in tax aggressiveness among the sampled mining companies. Capital investment appears to be more closely related to operational and production requirements, while debt financing may primarily serve business and financial needs rather than tax-planning purposes.

In contrast, related-party transaction intensity is positively associated with corporate tax aggressiveness. This indicates that companies with greater involvement in related-party receivables tend to have larger differences between accounting and taxable income. However, this finding should not be interpreted as direct evidence of transfer-pricing manipulation or profit shifting because the measure used captures related-party transaction intensity rather than the actual pricing of related-party transactions.

The study also finds that firm size is positively associated with corporate tax aggressiveness. Larger companies may have greater organizational resources, more complex business structures, and greater access to professional tax expertise, which may provide greater capacity for tax planning.

Overall, the findings suggest that corporate tax aggressiveness in the mining sector is more closely associated with related-party transaction intensity and firm size than with


Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

capital intensity and leverage. These findings highlight the importance of considering firm characteristics and related-party relationships when assessing corporate tax behavior.

For tax authorities, firm size and related-party transactions may be considered as potential indicators for risk-based tax monitoring, while further examination is still required to determine actual tax compliance. For companies, effective tax planning should be accompanied by transparency, appropriate documentation, and compliance with applicable tax regulations.

This study is limited by its focus on mining companies and the use of BTD and related-party receivables as proxies. Future research may use broader samples, longer observation periods, alternative measures of tax aggressiveness, and more direct measures of related-party transactions and transfer pricing.

## REFERENCES

Abidin, H. (2018). Pengaruh profitabilitas dan leverage terhadap agresivitas pajak. Undergraduate thesis. Widya Mandala Catholic University Surabaya.

Al Hasyim, A. A., Inayati, N. I., Kusbandiyah, A., & Pandansari, T. (2023). Pengaruh Transfer Pricing, Kepemilikan Asing, dan Intensitas Modal Terhadap Penghindaran Pajak. Jurnal Akuntansi Dan Pajak, 23.

Amalia, D. (2021). Pengaruh Likuiditas, Leverage Dan Intentitas Aset Terhadap Agresivitas Pajak. KRISNA:KumpulanRisetAkuntans, 12. https://ejurnal.warmadewa.ac.id/index.php/krisna/article/view/1596/2008

Aminah, N. N., & Eni Wuryani. (2021). Pengaruh Kepemilikan Institusional, Ukuran Perusahaan, Profitabilitas Terhadap Kebijakan Hutang Pada Perusahaan Manufaktur Di Bei 2014-2018. Jurnal Riset Akuntansi Dan Keuangan, 9(2), 2021, 337-352, 9(2), 337–352. https://doi.org/10.17509/jrak.v9i2.29483

Anggraeni, A. F., Zai, E., & Roswinna, W. (2025). Transfer Pricing, Ukuran Perusahaan, dan Agresivitas Pajak: Studi pada Sektor Pertambangan yang Terdaftar di Bursa Efek Indonesia. Reviu Akuntansi Dan Bisnis Indonesia, 9. https://doi.org/https://doi.org/10.18196/rabin.v9i2.25930

Aulia, I., & Mahapudin, E. (2020). Pengaruh profitabilitas , leverage , dan ukuran perusahaan terhadap tax avoidance. Akuntabel.

Cahyadi, H., Surya, C., Wijaya, H., & Salim, S. (2020). Pengaruh Likuiditas, Leverage, Intensitas Modal, dan Ukuran Perusahaan Terhadap Agresivitas Pajak. STATERA: Jurnal Akuntansi Dan Keuangan. https://doi.org/10.33510/statera.2020.2.1.9-16

Chrisandy, M. H., & Simbolon, R. (2022). Pengaruh Transfer Pricing, Beban Pajak Tangguhan terhadap Penghindaran Pajak pada Perusahaan Sektor Kimia. Syntax Idea, 4. https://doi.org/https://doi.org/10.46799/syntax-idea.v4i5.1832



Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Endaryati, E., Subroto, V., & Wahyuning, S. (2021). Likuiditas, Return On Assets, Leverage Dan Ukuran Perusahaan Terhadap Agresivitas Pajak. Jurnal Ilmiah Komputer Akuntansi, 14. https://journal.stekom.ac.id/index.php/kompak/article/view/529/395

Firmansyah, A., & Triastie, G. A. (2021). Bagaimana Peran Tata Kelola Perusahaan Dalam Penghindaran Pajak, Pengungkapan Tanggung Jawab Sosial Perusahaan, Pengungkapan Risiko, Efisiensi Investasi?

Fitriani, L., & Suhendi, C. (2025). Pengaruh Capital Intensity, Sales Growth, dan Kepemilikan Institusional Terhadap Agresivitas Pajak. ECo-Buss. https://doi.org/https://doi.org/10.32877/eb.v7i3.2208

Herlinda, A. R., & Rahmawati, M. I. (2021). Pengaruh Profitabilitas, Likuiditas, Leverage Dan Ukuran Perusahaan Terhadap Agresivitas Pajak. Jurnal Ilmu Dan Riset Akuntansi, 10. https://jurnalmahasiswa.stiesia.ac.id/index.php/jira/article/view/3738

Hidayat, A. T., & Fitria, E. F. (2018). Pengaruh Capital Intensity, Inventory Intensity, Profitabilitas dan Leverage Terhadap Agresivitas Pajak. Eksis: Jurnal Riset Ekonomi Dan Bisnis, 13. https://doi.org/https://doi.org/10.26533/eksis.v13i2.289

Hidayat, H., & Wijaya, S. (2021). Pengaruh Manajemen Laba Dan Transfer Pricing Terhadap Penghindaran Pajak. 25. https://www.researchgate.net/profile/Suparna-Wijaya/publication/357555126_Pengaruh_Manajemen_Laba_Dan_Transfer_Pricing_Terhadap_Penghindaran_Pajak/links/61d3f6d6e669ee0f5c83b97c/Pengaruh-Manajemen-Laba-Dan-Transfer-Pricing-Terhadap-Penghindaran-Pajak.pdf

Hutomo, M., Sari, R., & Nopiyanti, A. (2021). Pengaruh transfer pricing, thin capitalization, dan tunneling incentive terhadap agresivitas pajak. Prosiding BIEMA (Business Management, Economic, and Accounting National Seminar), 2.

Isnaini, R. S., Mukti, A. H., & Sianipar, P. B. H. (2024). Pengaruh Transfer Pricing, Profitabilitas, Dan Leverage Terhadap Penghindaran Pajak (Studi Empiris Perusahaan Yang Terdaftar Di Bursa Efek Indonesia Sektor Aneka Industri Tahun 2019-2022). SENTRI : Jurnal Riset Ilmiah, 3. https://doi.org/https://doi.org/10.55681/sentri.v3i2.2327

Kurniasih, T., & Sari, R. (2013). Pengaruh Return on Assets, Leverage, Corporate Governance, Ukuran Perusahaan Dan Kompensasi Rugi Fiskal Pada Tax Avoidance. Buletin Studi Ekonomi.

Lestari, N., & Syofyan, E. (2023). Pengaruh Profitabilitas, Thin Capitalization dan Transfer Pricingterhadap Agresivitas Pajak. Jurnal Eksplorasi Akuntansi (JEA), 5. https://pdfs.semanticscholar.org/034f/cce6d5d5f8c36467bbb199303ca21b3c31f6.pdf

Manullang, M., & Karundeng, M. (2023). Pengaruh Leverage, Transfer Pricing Terhadap



Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Agresivitas Pajak Pada Perusahaan Sektor Teknologi Yang Terdaftar Dalam BEI Pada Tahun 2020-2022. JMBI Unsrat, 10.

Mayndarto, E. C. (2022). Pengaruh Profitabilitas Dan Ukuran Perusahaan Terhadap Penghindaran Pajak Pada Perusahaan Manufaktur Sub Sektor Otomotif Yang Terdaftar Di Bursa Efek Indonesia. Jurnal Program Studi Akuntansi Politeknik Ganesha, 6. https://doi.org/https://doi.org/10.33395/owner.v6i1.590

Mulya, A. A., & Anggraeni, D. (2022). Ukuran perusahaan, Capital Intensity, Pendanaan aset dan profitabilitas sebagai determinan faktor agresivitas pajak. Owner : Riset Dan Jurnal Akuntansi, 6. https://doi.org/https://doi.org/10.33395/owner.v6i4.1152

Mutia, F., Dewi, R., & Siddi, P. (2018). Dimensi Agresivitas Pajak Dilihat Dari Ukuran Perusahaan Dan Capital Intensity (Study Kasus Perusahaan Manufaktur Sektor Industri Barang Konsumsi Yang Terdaftar di BEI). JAE: Jurnal Akuntansi Dan Ekonomi. https://ojs.unpkediri.ac.id/index.php/akuntansi/article/view/14066/1986

Pohan, C. A. (2018). Panduan Lengkap Pajak Internasional. Gramedia Pustaka Utama.

Prasetyo, A., & Wulandari, S. W. (2021). Capital Intensity, Leverage, Return on Asset, dan Ukuran Perusahaan Terhadap Agresivitas Pajak. Jurnal Akuntansi, 13. https://journal.maranatha.edu/index.php/jam/article/view/3519/1816

Prastiwi, D., & Waladi, A. (2022). Pengaruh Sales Growth, Capital Intensity, dan Profitabilitas terhadap Agresivitas Pajak. AKUNESA: Jurnal Akuntansi Unesa, 11. https://journal.unesa.ac.id/index.php/akunesa/article/view/17122/8372

Purnomo, Z. (2024). Mengupas Latar Belakang Penerapan Sistem Self assessment dalam Perpajakan. Direktorat Jenderal Pajak. https://pajak.go.id/id/artikel/mengupas-latar-belakang-penerapan-sistem-self-assessment-dalam-perpajakan %0A

Putri, S. A., & Yuliafitri, I. (2024). Pengaruh Profitabilitas, Leverage, Pertumbuhan Penjualan dan Ukuran Perusahaan terhadap Penghindaran Pajak. Jurnal Penelitian Inovatif, 4. https://doi.org/https://doi.org/10.54082/jupin.543

Rahmawati, N. T., & Jaeni. (2022). Pengaruh Capital Intensity, Leverage, Profitabilitas, Ukuran Perusahaan Dan Kepemilikan Manajerial Terhadap Agresivitas Pajak. JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha, 13. https://ejournal.undiksha.ac.id/index.php/S1ak/article/view/42816

Rosadani, N., & Wulandari, S. (2023). Pengaruh Profitabilitas, Capital Intensity, Ukuran Perusahaan, Dan Sales Growth Terhadap Agresivitas Pajak. Jurnal Riset Terapan Akuntansi, 7. https://jurnal.polsri.ac.id/index.php/jrtap/article/view/6334

Sabita, J. H., & Mildawati, T. (2018). Pengaruh Karakter Eksekutif, Ukuran Perusahaan, Leverage, Sales Growth terhadap Penghindaran Pajak. Jurnal Ilmu Dan Riset Akuntansi, 7. https://jurnalmahasiswa.stiesia.ac.id/index.php/jira/article/view/1289

Saputra, D., Dwi, R. C., & Yulita, R. H. (2022). Pengaruh Corporate Social Responsibility



Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

dan Ukuran Perusahaan Terhadap Penghindaran Pajak. Journal of Information System, Applied, Management, Accounting and Research., 6.

Soelistiono, S., & Adi, P. H. (2022). Pengaruh Leverage, Capital Intensity, dan Corporate Social Responsibility terhadap agresivitas pajak. Jurnal Ekonomi Modernisasi, 18(11). https://doi.org/https://doi.org/10.21067/jem.v18i1.6260

Sulaeman, R. (2021). Pengaruh Profitabilitas, Leverage dan Ukuran Perusahaan Terhadap Penghindaran Pajak (Tax Avoidance). Syntax Idea. https://jurnal.syntax-idea.co.id/index.php/syntax-idea/article/view/1050/614

Utomo, A. B., & Fitria, G. N. (2020). Ukuran Perusahaan Memoderasi Pengaruh Capital Intensity dan Profitabilitas Terhadap Agresivitas Pajak. Jurnal Bisnis Dan Manajemen, 10. https://doi.org/https://doi.org/10.15408/ess.v10i2.18800

Wenten, I. ketut, & Rahayu, T. S. (2025). Pengaruh Financial Constraints Dan Transfer Pricing Terhadap Tax Aggressiveness Dengan Ukuran Perusahaan Sebagai Pemoderasi. J-CEKI:JurnalCendekiaIlmiah, 5. https://al-haramjournal.id/index.php/J-CEKI/article/view/11619/9183



Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.