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THE MITIGATING EFFECT OF FINANCIAL ANALYST COVERAGE ON TAX AGGRESSIVENESS: EVIDENCE FROM BRAZILIAN B3-LISTED COMPANIES

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ABSTRACT

This study examines the relationship between financial analyst coverage and tax aggressiveness among Brazilian companies listed on the B3 stock exchange from 2010 to 2021. Using the number of analysts covering a company as a proxy for information asymmetry, we investigate how analyst scrutiny influences corporate tax practices. Our analysis employs panel data regression on 110 non-financial companies, measuring tax aggressiveness through Book-Tax Differences (BTD) and Effective Tax Rates (ETR). We find that greater analyst coverage is associated with reduced tax aggressiveness—that is, increased analyst scrutiny correlates with lower BTDs and higher ETRs, indicating a reduction in aggressive tax planning practices. These results contrast with some recent findings in the Brazilian context but are largely consistent with international evidence. Robustness checks confirm that these associations hold after controlling for several firm-specific factors. This study contributes to the literature by providing empirical evidence from an emerging market and by employing a continuous measure of analyst coverage. While our results are limited to the Brazilian market, they underscore the critical role of financial analysts as external monitors. Further investigation in different market environments is needed to generalize these findings. Ultimately, our research highlights the importance of analyst coverage in mitigating information asymmetry and enhancing corporate accountability in tax reporting.

Keywords: Financial analyst coverage. Tax aggressiveness. Information asymmetry. Book-Tax Differences. Effective Tax Rates. Emerging markets. Brazilian stock market (B3).

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1 INTRODUCTION

The financial market is characterized by substantial asymmetric information, which can significantly hinder investors' decision-making (Akerlof, 1970; Spence, 1973). In this complex environment, financial analysts are crucial as gatekeepers by providing relevant and high-quality information about publicly traded companies (Healy & Palepu, 2001; Lev & Gu, 2016).

Financial analysts are responsible for processing and disseminating opinions to clarify optimal scenarios for resource allocation (Bradley, Gokkaya, & Liu, 2017). Moreover, Chen and Lin (2017) suggest that analysts have both the skills and the incentives to prepare and disclose tax-related information, thereby further decreasing the information gap between companies and their investors. This reduction in asymmetry may, in turn, affect a firm's propensity to engage in tax evasion.

Despite extensive research on the determinants of tax aggressiveness, the relationship between financial analyst coverage and corporate tax aggressiveness remains ambiguous—especially in emerging markets such as Brazil (Hanlon & Heitzman, 2010; Graham, Hanlon, Shevlin, & Shroff, 2014). Recent studies in the Brazilian capital market have produced conflicting evidence. For example, while Carvalho et al. (2024) indicate that greater analyst coverage is associated with increased tax aggressiveness among Brazilian firms, Allen et al. (2016) report that higher analyst coverage reduces aggressive tax planning through enhanced transparency and accountability. However, the research question has not been fully addressed in the literature: "Does increased financial analyst coverage lead to reduced corporate tax aggressiveness among Brazilian companies listed on the B3 stock exchange?"

The primary objective of this research is to examine the impact of financial analyst coverage on tax aggressiveness among Brazilian companies listed on the B3 stock exchange. In other words, this study aims to determine whether increasing analyst coverage is associated with decreasing tax aggressiveness. The research hypothesis is that higher financial analyst coverage decreases tax aggressiveness by enhancing transparency and accountability in financial reporting.

Tax aggressiveness involves the complex accounting maneuvers that firms use to minimize their tax liabilities. Such practices can compromise the transparency and accuracy of financial reporting, thereby widening the information gap between companies and their stakeholders (Desai & Dharmapala, 2009a). This study examines whether robust financial analyst coverage can mitigate tax aggressiveness by improving transparency and accountability and, consequently, reducing the information gap.

This study contributes to the literature by providing empirical evidence from an emerging market context using a continuous measure of analyst coverage. The findings offer valuable insights for investors, regulators, and corporate managers by highlighting how financial analysts can function as effective external monitors, promoting transparency and deterring aggressive tax strategies. Additionally, our research underscores the need for ongoing investigation into the dynamic relationship between analyst coverage and tax aggressiveness across diverse market environments.

The remainder of this paper is organized as follows: Section 2 presents the theoretical framework and hypothesis development; Section 3 details the research methodology; Section 4 discusses the empirical results; and Section 5 concludes with implications and suggestions for future research.

2 THEORETICAL FRAMEWORK

2.1 Information Asymmetry

Information asymmetry occurs when some agents possess more information than others about an asset due to privileged access to information not yet reported to general users (Camargo,

Gomes, & Barbosa, 2003; Lanzana, 2004; Belo & Brasil, 2006). This phenomenon can significantly impact financial markets and decision-making processes.

Akerlof (1970) argued that information asymmetry could cause the market to lose its role as a facilitator in allocating financial resources between surplus and deficit agents. This seminal work highlighted the importance of addressing information imbalances in financial markets. As Grossman and Stiglitz (1980) further explain, inefficient information dissemination can lead to market distortions and increased transaction costs.

Brown and Hellegeist (2007) state that accounting helps reduce informational asymmetry between internal and external agents, making investors more inclined to invest in companies with higher informative quality. High-quality information disclosure improves firm visibility and reduces moral hazard and adverse selection, linked to information imbalance (Biddle & Hilary, 2006).

To address information asymmetry, Healy and Palepu (2001) propose several measures: (i) creating optimal agreements between investors and entrepreneurs with incentives for full disclosure, (ii) establishing regulations requiring managers to provide comprehensive accounting information, and (iii) utilizing "information intermediaries" such as auditors, financial analysts, and rating agencies.

2.2 Analyst Coverage

As informational asymmetry cannot be directly observed or measured, it is necessary to use proxies that capture its effect (Girão, Martins, & Paulo, 2013). This study uses analyst coverage as a proxy for information transparency between firms and their investors. Financial analysts are primary agents providing information in various financial markets, the accounting industry, rating companies, and independent audit firms, serving as crucial communication channels (Vasconcelos et al., 2008).

Financial analysts collect, process, and disseminate information about firms, providing opinions that clarify the most efficient options for resource allocation. They play a crucial role in market efficiency by helping disseminate information and reducing the degree of information asymmetry (Schipper, 1991; Healy & Palepu, 2001; Martinez, 2004; Bradley, Gokkaya & Liu, 2017). Moreover, as Lev and Gu (2016) argue, analysts play a vital role in validating and elucidating corporate disclosures, thereby mitigating information asymmetry and enabling investors to make better-informed decisions.

Martinez (2004) highlights that market analysts are perceived as professionals who analyze publicly traded companies' performance and future potential, acting as information transfer channels to less informed segments. By doing so, analysts mitigate the effects of informational asymmetry and contribute to increasing market efficiency.

Chen and Lin (2017) argue that analysts are well-trained professionals with extensive knowledge in finance, accounting, and tax matters, enabling them to identify potential irregularities in companies' financial statements promptly. As active information intermediaries, analysts disseminate information about a company throughout the financial market.

2.3 Tax Aggressiveness

Tax planning has become essential for companies to reduce taxes and plays a vital role in decision-making (Klassen, Lisowsky, & Mescall, 2016). Hanlon and Heitzman (2010) broadly refer to tax evasion as the overt reduction of taxes, a widespread practice among corporations.

The tax literature describes various consequences of corporate tax avoidance. While some studies highlight the main advantages as tax savings and increased cash flow (Graham et al., 2014; Chen & Lin, 2017; Menichini, 2017; Cen et al., 2017), others point out potential adverse effects. These include reputational damage (Hanlon & Slemrod, 2008; Chen & Lin, 2017), higher litigation

risk (Graham & Tucker, 2006), tax examination expenses (Mills & Newberry, 2001; Mills, 1998), decreased shareholder wealth (Desai & Dharmapala, 2009b), higher audit fees (Donohoe & Knechel, 2014; Hanlon et al., 2012; Kuo & Lee, 2016), substantial fines (Li, Pittman & Wang 2019; Wilson 2009), increased risk of stock price declines (Kim, Li & Zhang 2011), and growth in the cost of capital (Isin 2018; Hasan et al. 2014).

Martinez (2017) defines tax planning as a strategy to reduce obligations with tax authorities by leveraging legal concessions and exemptions in tax law. Zimmermann and Goncharov (2006) characterize aggressive tax planning as reducing income tax expenses. Tang (2011) further defines it as a taxpayer's strategy to exploit ambiguities and uncertainties in tax laws to maximize tax burden and accounting structure exemptions.

Frank, Lynch, and Rego (2009) define tax aggressiveness as tax reduction achieved through manipulation and planning, which may or may not be considered fraud (evasion). Lietz (2013) describes it as the willingness of agents to reduce the tax burden that is not explicitly stated, with greater intensity of tax cost reduction indicating higher tax aggressiveness.

2.4 Analyst Coverage and Tax Aggressiveness

The relationship between analyst coverage and tax aggressiveness is multifaceted, illustrating how market conditions and contextual factors shape this dynamic. In some markets, high analyst coverage has been associated with increased tax avoidance practices. This phenomenon, often explained by the "pressure view," suggests that managers facing intense analyst scrutiny may resort to aggressive tax strategies to meet performance targets (Almaharmeh et al., 2022). For example, in emerging markets such as Indonesia, Prihandini (2020) found that higher analyst coverage is linked to elevated tax aggressiveness, attributed to underlying market inefficiencies.

Conversely, other studies underscore the constraining effect of high analyst coverage on corporate tax aggressiveness. Allen et al. (2016) argue that heightened analyst scrutiny enhances transparency and subjects managerial tax planning to rigorous oversight, thereby limiting opportunistic behavior. Moreover, research examining exogenous shocks to analyst coverage—such as brokerage mergers and closures—has shown that a reduction in analyst monitoring often precedes an increase in aggressive tax practices (Chen et al., 2018; Chen & Lin, 2017).

In the Brazilian context, however, the empirical evidence remains contradictory. While Carvalho et al. (2024) observed a positive correlation between extensive analyst coverage and heightened tax aggressiveness among companies listed on B3, such results likely reflect Brazil's unique regulatory environment, distinctive accounting practices, and complex tax system. Recent shifts in regulatory oversight, gradual improvements in disclosure practices, and the evolution of the Brazilian capital market suggest that, under these changing conditions, analyst scrutiny could play a moderating role in curbing aggressive tax strategies.

Given this scenario, it is essential to delve deeper into the interplay between analyst coverage and tax behavior within Brazil. Our central hypothesis is thus formulated as follows:

H1: As a proxy for information asymmetry, the level of financial analyst coverage is negatively associated with the degree of tax aggressiveness in Brazilian companies listed on B3.

This hypothesis posits that increasing the number of analysts following a company enhances transparency and accountability in financial reporting. Consequently, it reduces the information asymmetry between investors and management, discouraging the adoption of overly aggressive tax planning practices. Considering the distinct regulatory landscape and evolving market dynamics in Brazil, a focused analysis on this context offers valuable insights for policymakers, investors, and corporate managers.

Table 1 summarizes the key authors and their findings discussed in this section, providing a comparative overview that underpins the theoretical framework and emphasizes the importance of investigating this relationship in the Brazilian market.

Table 1

Authors and Summary of Findings

Author(s)	Area/Theme	Summary of Findings
Akerlof (1970)	Information Asymmetry	Highlighted that information asymmetry disrupts efficient resource allocation in markets.
Brown & Hellegeist (2007)	Quality of Disclosure	Demonstrated that high-quality accounting disclosure reduces informational asymmetry and increases investor confidence.
Healy & Palepu (2001)	Reducing Asymmetry	Proposed using information intermediaries, such as auditors and analysts, and regulatory measures to mitigate information imbalances.
Vasconcelos et al. (2008)	Role of Analysts	Emphasized the critical role of financial analysts in disseminating essential market information.
Schipper (1991)	Analyst Functionality	Stressed that analysts play a key role in interpreting and distributing information to improve resource allocation.
Martinez (2004)	Information Intermediation	Reinforced that analysts serve as trusted conduits, reducing informational inequalities in the market.
Chen & Lin (2017)	Detection of Irregularities	Found that analysts' expertise enables them to quickly spot irregularities in financial statements, decreasing information asymmetry.
Hanlon & Heitzman (2010)	Tax Aggressiveness Concepts	Defined tax evasion as the intentional reduction of tax liabilities through strategic accounting practices.
Desai & Dharmapala (2009)	Consequences of Tax Aggressiveness	Noted that aggressive tax practices can harm shareholder wealth and damage corporate reputations.
Martinez (2017)	Definition of Tax Aggressiveness	Defined aggressive tax planning as the deliberate use of accounting strategies to minimize tax obligations.
Tang (2011)	Exploiting Tax Law Ambiguities	Described tax aggressiveness as exploiting the ambiguities and uncertainties in tax laws to maximize fiscal benefits.
Frank, Lynch & Rego (2009)	Tax Planning Strategies	Conceptualized aggressive tax planning as reducing tax liabilities through manipulation and strategic planning.
Lietz (2013)	Indicators of Tax Aggressiveness	Argued that the intensity of tax burden reduction serves as a measure of aggressive tax practices.
Almaharmeh et al. (2022)	Managerial Pressure	Supported the "pressure view" by showing that high analyst coverage can pressure managers to adopt more aggressive tax strategies.
Prihandini (2020)	Emerging Markets Context	Found evidence that in emerging markets, such as Indonesia, higher analyst coverage is associated with increased tax aggressiveness, due to market inefficiencies.
Allen et al. (2016)	Transparency & Monitoring	Suggested that increased analyst coverage improves transparency and reduces tax aggressiveness by subjecting management strategies to greater scrutiny.
Chen et al. (2018)	Impact of Exogenous Shocks	Indicated that exogenous reductions in analyst coverage (e.g., due to brokerage changes) lead to an increase in tax aggressiveness among firms with historically low coverage.
Carvalho et al. (2024)	Brazilian Market Context	Observed that in Brazilian companies listed on B3, higher analyst coverage is correlated with more aggressive tax practices.

3 METHODOLOGY

This study employs an empirical approach, utilizing multivariate statistical analysis techniques with STATA software. The methodology is adapted from Chen and Lin's (2017) work, which examined similar relationships between analyst coverage and tax aggressiveness.

3.1 Sample Selection and Data Collection

The study's sample comprises Brazilian publicly traded companies listed on the B3 (Brasil, Bolsa, Balcão) stock exchange. Data were collected for the period between 2010 and 2021. Companies in the financial sector were excluded due to their distinct tax and accounting regulations, which differ from other sectors. Additionally, companies with negative or excessively high Effective Tax Rates (ETR), specifically those with values greater than one —were removed to avoid skewed results resulting from potential outliers.

Analyst coverage information was sourced from the Thomson Reuters/IBES database, while other financial data, such as the book-tax differences (BTD) and effective tax rates (ETR), were obtained from the Economática® database. Table 2 below provides a detailed breakdown of the sample composition:

Table 2
Sample Composition

Description	Quantity
Stock Exchange Companies with Analyst Coverage Information	194
(-) Financial Sector Companies	26
(-) Negative ETR companies and greater than 1	58
(=) Total companies	110
(x) Years (2011-2021)	11
Number of observations used	599

Source: Elaborated from the research data

It is important to note that the sample includes all companies with available analyst coverage data—even if, in a specific observation, a firm is recorded as having zero analysts covering it. In our dataset, a zero value for analyst coverage indicates that the firm was included and had observable coverage data available, but in that particular year, no analysts were following the company. This approach allows us to capture the full variation in the independent variable without excluding firms that may experience lapses in analyst coverage.

3.2 Variables and Measurement

3.2.1 Dependent Variables: Tax Aggressiveness Metrics

Following Hanlon and Heitzman (2010) and Lietz (2013), we use two primary metrics as proxies for tax aggressiveness:

a) Book-Tax Differences (BTD): $BTD_{i,t} = [PBIT_{i,t} - (CIT_{i,t} / 0.34)] / \text{Total Assets}_{i,t-1}$

Where: PBIT = Profit Before Income Tax CIT = Corporate Income Tax i = firm t = year

b) Effective Tax Rate (ETR): $ETR_{i,t} = CIT_{i,t} / EBIT_{i,t}$

Where: EBIT = Earnings Before Interest and Taxes

It's important to note that these variables have opposite interpretations: a higher BTD indicates greater tax aggressiveness, while a lower ETR suggests more aggressive tax practices. BTD represents the divergence between accounting profit and taxable profit, while ETR measures the tax percentage imposed on a firm's performance (Martinez & Silva, 2017; Martinez, 2017).

3.2.2 Independent Variable: Analyst Coverage

The primary independent variable is the number of analysts covering a specific company during the year, which serves as a proxy for the level of information asymmetry between investors and company management (Martinez, 2011; Oliveira et al., 2018).

3.2.3 Control Variables

To isolate the effect of financial analyst coverage on tax aggressiveness, we include the following control variables:

- ROA (Return on Assets): Operational profit from current year divided by total assets of the previous year
- FinLev (Financial Leverage): Long-term debt divided by total assets
- FixedAssets (Tangibility): Fixed assets divided by total assets
- Size: Natural logarithm of equity market value
- MB (Market-to-Book Ratio): Market value of assets divided by book value of assets.

The selection of these control variables is based on extensive prior research (e.g., Martinez et al., 2019; Martinez & Motta, 2020) demonstrating their relevance in explaining corporate tax behavior.

3.3 Econometric Model

We employ a panel data regression model to analyze the relationship between analyst coverage and tax aggressiveness. This model allows us to capture the dynamic relationship between variables across both firms and time. The general form of our model is as follows:

$$TA_{i,t} = \beta_0 + \beta_1 Coverage_{i,t} + \beta_2 FinLev_{i,t} + \beta_3 FixedAssets_{i,t} + \beta_4 Size_{i,t} + \beta_5 MB_{i,t} + \beta_6 ROA_{i,t} + \varepsilon_{i,t}$$

Where:
TA = Tax Aggressiveness measure (either BTD or ETR)
Coverage = Number of analysts covering the company
ε = Error term

We estimate this model using both fixed-effects and random-effects specifications, employing the Hausman test to determine the most appropriate model for our data. Although the Hausman test is used to determine the most appropriate model specification, additional diagnostic tests were performed. These include the Breusch-Pagan test for heteroscedasticity and the Wooldridge test for serial correlation. Robust standard errors (clustered at the firm level) are applied to address any remaining issues, ensuring greater reliability of the estimated coefficients.

3.4 Hypothesis Testing

Our main hypothesis (H1) posits that the level of financial analyst coverage is negatively associated with the degree of tax aggressiveness. We test this hypothesis by examining the coefficient β_1 in our regression model. A significant negative coefficient for BTD and a positive coefficient for ETR would support our hypothesis, indicating that increased analyst coverage is associated with reduced tax aggressiveness.

4 RESULTS

4.1 Introduction to the Results Section

In this section, we present the empirical findings of our analysis. Our primary research hypothesis (H1) posits that higher financial analyst coverage is associated with lower corporate tax aggressiveness among Brazilian companies listed on B3. To test this hypothesis, we begin by outlining the descriptive statistics of our sample, followed by a correlation analysis and the estimation of panel data regression models. Throughout these subsections, we compare our results with previous studies (e.g., Chen and Lin, 2017; Hong and Kacperczyk, 2010; Carvalho et al., 2024) and discuss how our findings relate to the underlying theories of information asymmetry and monitoring. This integrated discussion not only clarifies our empirical evidence but also reinforces the theoretical foundations of our study.

4.2 Descriptive Statistics

Table 3 presents the descriptive statistics for all variables in our analysis, based on 599 observations. Because our sample selection excludes financial sector firms, companies with negative or extremely high Effective Tax Rates (ETR), and retains observations even when analyst coverage is zero, the available data reflect a stringent yet targeted set of observations.

Table 3
Descriptive Statistics of Variables

Variable	N	Average	Std dev	Min	Max
BTD	599	0,08	0,08	-0,03	0,89
ETR	599	0,08	0,11	0,00	0,95
Coverage	599	6,77	5,30	0,00	19,00
MB	599	1,15	1,09	0,02	7,97
Size	599	16,19	1,54	11,20	20,97
FixedAssets	599	0,23	0,19	0,00	0,80
FinLev	599	1,51	9,73	-167,36	30,35
ROA	599	7,63	11,42	-10,52	221,73

Source: Own preparation based on the research data.
Note. All values are adjusted for inflation

A few key points from these statistics are noteworthy:

- The effective tax rate (ETR) averages 8%, which is substantially lower than Brazil's statutory corporate tax rate of 34%. This gap suggests that many firms may be engaging in tax planning activities. The wide range (0% to 95%) and high standard deviation indicate considerable variability.
- The Book-Tax Difference (BTD) has an average of 8% with moderate variation, reflecting a typical divergence between book income and taxable income.
- Analyst coverage varies widely, from 0 (indicating a year in which a company, though in the dataset, was not followed by any analysts) to 19 analysts per firm, which provides sufficient variation to assess its impact on tax aggressiveness.

- Other control variables also reveal considerable heterogeneity among firms, suggesting that firm size, asset tangibility, and financial leverage may all contribute to differences in tax planning behavior.

These descriptive measures are consistent with previous literature that documents significant variability in tax practices and the role of analyst coverage (e.g., Chen and Lin, 2017; Hanlon and Heitzman, 2010).

4.3 Correlation Analysis

Table 4 presents the correlation matrix for our variables at a 5% significance level. This correlation matrix serves as a preliminary assessment of the relationships before moving on to multivariate regression analysis.

Table 4
Correlation Among the Variables

Variables	BTD	ETR	Coverage	MB	Size	FixAsset	FinLev	ROA
BTD	1							
ETR	-0,3622*	1						
Coverage	-0,1578*	0,0754	1					
MB	0,3364*	-0,1326*	0,0919*	1				
Size	-0,2300*	0,0808*	0,4562*	-0,2289*	1			
FixAssets	-0,0752	0,0113	0,1652*	-0,072	0,2314*	1		
FinLev	-0,0181	-0,0683	0,0511	0,0511	-0,0213	-0,1	1	
ROA	0,7154*	-0,1418*	-0,1116*	0,1919*	-0,2398*	-0,1	-0,0146	1

Source: Own elaboration based on the research data. (*) variable significant at 5% level.

Key findings from the correlation analysis include:

- BTD shows a significant negative correlation with ETR (-0.3622), firm size (-0.2300), and analyst coverage (-0.1578), which aligns with our hypothesis.
- BTD is positively correlated with the market-to-book ratio (MB) (0.3364), suggesting that firms with higher MB ratios tend to have larger book-tax differences.
- ETR displays a significant positive correlation with firm size (0.0808) and a negative correlation with ROA (-0.1418).
- Analyst coverage is positively correlated with firm size (0.4562), indicating that larger firms generally attract more analyst scrutiny.
- Due to a high positive correlation between ROA and BTD (0.7154), likely because both variables are scaled by lagged total assets, ROA was excluded from Model 1 to avoid multicollinearity issues.

These correlations provide preliminary support for the role of analyst coverage as a monitoring mechanism that may mitigate aggressive tax planning.

4.4 Regression Analysis

We estimate two panel data regression models to test our hypothesis: Model 1 using BTD as the dependent variable (Table 5), and Model 2 using ETR (Table 6). These models allow us to

analyze the impact of analyst coverage on different measures of tax aggressiveness while controlling for other firm-specific factors.

4.4.1 Model 1: BTD as Dependent Variable

The functional form of Model 1 is:

$$BTD_{i,t} = \beta_0 + \beta_1 Coverage_{i,t} + \beta_2 FinLev_{i,t} + \beta_3 FixedAssets_{i,t} + \beta_4 Size_{i,t} + \beta_5 MB_{i,t} + u_{i,t} \quad (1)$$

Table 4 presents the results of the random effects estimation for Model 1. The Hausman test (Prob > chi² = 0.4967) confirms that the random effects model is appropriate for our data.

Table 5

Panel Data Model for BTD Variable (Random Effects)

Variables	Coefficient	Std. Error	t-value	P>|t|
Coverage	-0,003*	0,001	-3,26	0,001
MB	0,023*	0,004	5,56	0,000
Size	-0,007	0,005	-1,50	0,134
FixedAssets	-0,037	0,032	-1,14	0,253
FinLev	0,000	0,000	0,70	0,481
_cons	0,207	0,080	2,60	0,009

R²: Within = 0.09, Between = 0.05, Overall = 0.14

Note. (*) variable significant at 1% level, (**) variable significant at 5% level, (***) variable significant at 10% level.

Source: Own preparation based on the research data.

In Model 1, analyst coverage has a significant negative effect on BTD ($\beta_1 = -0.003$, $p < 0.01$), supporting our hypothesis that greater analyst surveillance leads to lower tax aggressiveness. Additionally, MB is positively significant, indicating that firms with higher MB ratios exhibit larger book-tax differences. The insignificance of variables such as Size, FixedAssets, and FinLev suggests that their influence is less critical in explaining BTD in our sample. These findings are consistent with previous studies (e.g., Chen and Lin, 2017; Hong and Kacperczyk, 2010) and support our hypothesis.

4.4.2 Model 2: ETR as Dependent Variable

The functional form of Model 2 is:

$$ETR_{i,t} = \beta_0 + \beta_1 Coverage_{i,t} + \beta_2 FinLev_{i,t} + \beta_3 FixedAssets_{i,t} + \beta_4 Size_{i,t} + \beta_5 MB_{i,t} + \beta_6 ROA_{i,t} + u_{i,t.} \quad (2)$$

Table 6 presents the results of the random effects estimation for Model 2. The Hausman test (Prob > chi² = 0.5275) supports the appropriateness of the random effects model for this specification.

Table 6
Panel Data Model for ETR Variable (Random Effects)

Variables	Coefficient	Std. Error	t	P>|t|
Coverage	0,0025**	0,00	2,05	0,04
MB	-0,0124**	0,01	-2,19	0,03
Size	-0,0032	0,01	-0,63	0,53
FixedAssets	-0,0084	0,04	-0,24	0,81
FinLev	-0,0007	0,00	-1,60	0,11
ROA	-0,0015*	0,00	-3,56	0,00
_cons	0,1456	0,08	1,80	0,07

R^2: Within = 0.05, Between = 0.02, Overall = 0.04
Note. (*) variable significant at 1% level, (**) variable significant at 5% level, (***) variable significant at 10% level.
Source: Own preparation based on the research data.

In Model 2, the coefficient for analyst coverage is significantly positive ($\beta_1 = 0.0025$, $p < 0.05$). Because a higher ETR implies less aggressive tax planning, this finding also supports our hypothesis. Additionally, MB exhibits a significant negative impact on ETR, and ROA is negatively related to ETR, suggesting that more profitable firms report lower effective tax rates. The insignificance of other variables further underscores the robust effect of analyst coverage on reducing tax aggressiveness.

4.5 Discussion and Comparison with the Literature

The results from both regression models support our hypothesis that greater analyst coverage is associated with less aggressive tax practices. In Model 1, the negative relationship between analyst coverage and BTD confirms that increased external scrutiny narrows the divergence between accounting and taxable income. In Model 2, the positive impact of analyst coverage on ETR implies that firms under greater analyst scrutiny report higher effective tax rates (i.e., less tax planning).

These findings are in line with earlier research by Chen and Lin (2017) and Hong and Kacperczyk (2010), which similarly found evidence that enhanced external monitoring curbs aggressive tax strategies. Conversely, our results differ from those of Carvalho et al. (2024), who reported a positive association between analyst coverage and tax aggressiveness in the Brazilian context. Such discrepancies may be attributed to differences in sample selection, measurement of tax aggressiveness (BTD vs. ETR), or the evolving regulatory and market environments over time.

Our empirical results reinforce the theoretical premise that financial analysts, by reducing information asymmetry and increasing corporate transparency, exert a monitoring effect that limits opportunistic tax planning. This evidence not only supports our research hypothesis but also adds credence to the broader literature on the role of external governance mechanisms in financial reporting.For regulators and investors, the demonstration that greater analyst coverage is linked to less aggressive tax strategies suggests that policies encouraging analyst engagement could improve corporate tax compliance and accountability. Companies may also benefit from recognizing that increased external scrutiny serves as a deterrent to aggressive tax planning practices.

In summary, our detailed descriptive, correlational, and regression analyses consistently indicate that higher financial analyst coverage is significantly associated with a reduction in corporate tax aggressiveness. This outcome not only confirms our hypothesis but also provides a strong empirical foundation for the theoretical arguments discussed in the literature, thereby

contributing to a more comprehensive understanding of the monitoring role that external analysts play in corporate governance.

5 CONCLUSIONS AND IMPLICATIONS

This study investigated the influence of analyst coverage on tax aggressiveness among Brazilian companies listed on the B3 between 2010 and 2021. Using a panel dataset of 110 firms and employing multiple regression analysis with both Book-Tax Differences (BTD) and Effective Tax Rates (ETR) as measures of tax aggressiveness, our results provide strong evidence that increased analyst coverage is associated with less aggressive tax strategies.

Our findings diverge from those reported by Carvalho et al. (2024), who observed a positive relationship between analyst coverage and tax aggressiveness in a similar context. One possible explanation for this divergence is the evolution of market dynamics in Brazil. Over recent years, changes in regulatory oversight, improvements in disclosure practices, and heightened investor scrutiny may have contributed to an environment where analyst coverage more effectively restrains aggressive tax planning. In contrast, earlier periods may have exhibited conditions that allowed for greater managerial discretion in tax reporting.

The consistency of our results across both tax aggressiveness measures reinforces the robustness of our conclusions. Moreover, our findings are in line with certain international studies (e.g., Allen et al., 2016) that also suggest enhanced external monitoring mitigates aggressive tax behaviors. However, it is crucial to note that the specific market conditions, regulatory frameworks, and investor environments differ across contexts. For instance, while our study focuses on Brazilian firms operating under increasingly stringent disclosure requirements, other studies may reflect environments with different levels of market development or regulatory stringency.

The implications of our study are significant for various stakeholders. For investors and market participants, the association of higher analyst coverage with less aggressive tax practices provides reassurance regarding the transparency and reliability of corporate tax information. Regulators and policymakers may view these findings as evidence that enhancing the role of financial analysts in monitoring could support more prudent tax practices. From a managerial perspective, firms facing intense analyst scrutiny may have a strong incentive to adopt transparent tax reporting practices to maintain investor confidence and secure a favorable market reputation.

Despite its contributions, our study has several limitations. The relatively modest sample size and the focus on publicly traded Brazilian companies over the examined period may limit the generalizability of our findings. Moreover, data availability challenges and the possibility of omitted variable bias warrant caution in interpreting the causal impact of analyst coverage on tax aggressiveness. Future research could address these limitations by examining alternative measures of tax planning, extending the analysis to other emerging markets, or exploring potential non-linear relationships between analyst coverage and tax practices in differing regulatory environments.

In conclusion, our study provides compelling evidence that financial analyst coverage can serve as an effective external monitoring mechanism, leading to less aggressive tax planning among Brazilian publicly traded companies. The differences observed between our findings and those of earlier studies underscore the importance of considering evolving market conditions and regulatory environments when assessing corporate tax behavior. These insights offer a valuable foundation for future research aimed at further disentangling the complex interplay between analyst coverage, market dynamics, and corporate tax practices.

REFERENCES

Akerlof, G. A. (1970). The Market for Lemons. Quality uncertainty and the Market Mechanism. *Quarterly Journal of Economics*, *84*(3), 488-500. https://doi.org/10.2307/187943

Allen, A., Francis, B. B., Wu, Q., & Zhao, Y. (2016). Analyst coverage and corporate tax aggressiveness. *Journal of Banking & Finance*, *73*, 84–98. https://doi.org/10.1016/j.jbfina.2016.09.003

Almaharmeh, M. I., Shehadeh, A. A., & Aladwan, M. (2022). Financial analyst coverage and tax avoidance: Evidence from the UK. *Global Business and Economics Review*, *27*(3), 253. https://doi.org/10.1504/GBER.2022.125746

Belo, N. M., & Brasil, H. G. (2006). Assimetria informacional e eficiência semiforte de mercado. *Revista de Administração de Empresas - RAE*, *46*, 48–57.

Biddle, G. C., & Hilary, G. (2006). Accounting quality and firm-level capital investiment. *The Accounting Review, 81*(5), 963–982. https://doi.org/10.2308/accr.2006.81.5.963

Bradley, D., Gokkaya, S., & Liu, X. (2017). Before an analyst becomes an analyst: Does industry experience matter? *The Journal of Finance, 72*(2), 751–792. https://doi.org/10.1111/jofi.12466

Brown, S., & Hillegeist, S. A. (2007). How disclosure quality affects the level of information asymmetry. *Review of Accounting Studies, 12*, 443–477. https://doi.org/10.1007/s11142-007-9032-5

Camargo, M. A., Gomes, G. D., & Barbosa, F. V. (2003). Integração de mercados e arbitragem com títulos transfronteiriços: ADRS – american depositary receipts. *Caderno de Pesquisas em Administração*, *10*(2), 51–67.

Carvalho, T. A., Monte-Mor, D. S., Tardin, N., & Santos, S. G. (2024). Cobertuta de Analistas e Agressividade Fiscal. *Revista de Administração, Contabilidade e Economia da Fundace*, *15*(1). https://doi.org/10.13059/racef.v15i1.941

Cen, L., Maydew E., Zhang, L., & Zuo, L. (2017). Customer-supplier relationships and corporate tax avoidance. *Journal of Financial Economics*, 123, 377–394. https://doi.org/10.1016/j.jfineco.2016.09.009

Chen, T., & Lin, C. (2017). Does information asymmetry affect corporate tax aggressiveness?. *Journal of Financial and Quantitative Analysis*, *52*(5), 2053–2081. https://doi.org/10.1017/S0022109017000679

Chen, N. X., Chiu, P.-C., & Shevlin, T. (2018). Do Analysts Matter for Corporate Tax Planning? Evidence from a Natural Experiment. *Contemporary Accounting Research*, *35*(2), 794–829. https://doi.org/10.1111/1911-3846.12384

Desai, M. A., & Dharmapala, D. (2009a). Corporate Tax Avoidance and Firm Value. *Review of Economics and Statistics, 91*, 537–546. https://doi.org/10.1162/rest.91.3.537

Desai, M. A., & Dharmapala, D. (2009b). Earnings Management, Corporate Tax Shelters, and Book-Tax Alignment. *National Tax Journal, 62*, 169–186. https://doi.org/10.17310/ntj.2009.1.08

Donohoe, M. P., & Knechel, W. R. (2014). Does corporate tax aggressiveness infuence audit pricing? *Contemporary Accounting Research*, 31(1), 284–308. https://doi.org/10.1111/1911-3846.12036

Frank, M. M., Lynch, L. J., & Rego, S. O. (2009). Tax Reporting Aggressiveness and Its Relation to Aggressive Financial Reporting. *The Accounting Review*, *84*(2), 467–496. https://doi.org/10.2308/accr.2009.84.2.467

Girão, L. F. A. P., Martins, O. S., & Paulo, E. (2013). Avaliação de empresas e probabilidade de negociação com informação privilegiada no mercado brasileiro de capitais. *Revista de Administração da USP (RAUSP)*, *49*(3), p. 462–475. https://doi.org/10.5700/rausp1159

Graham, J. R., Hanlon, M., Shevlin, T., & Shroff, N. (2014). Incentives for Tax Planning and Avoidance: Evidence from the Field. *Accounting Review, 89*, 991-1023. https://doi.org/10.2308/accr-50678

Graham J. R., & Tucker, A. L. (2006). Tax shelters and corporate debt policy. *Journal of Financial Economics,* 81(3), 563–594. https://doi.org/10.1016/j.jfineco.2005.09.002

Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. *American Economic Review, 70*(3), 393–408. https://doi.org/10.2307/1805228

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, *50*(2), 127–178. https://doi.org/10.1016/j.jacceco.2010.09.002

Hanlon, M., & Slemrod, J. (2008). What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics, 93*(1-2), 126–141. https://doi.org/10.1016/j.jpubeco.2008.09.004

Hanlon, M., Krishnan, G. V., & Mills, L. F. (2012). Audit fees and book-tax diferences. *The Journal of the American Taxation Association, 34*(1), 55–86. https://doi.org/10.2308/atax-10184

Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2014). Beauty is in the eye of the beholder: the efect of corporate tax avoidance on the cost of bank loans. *Journal of Financial Economics, 113*(1),109–130. https://doi.org/10.1016/j.jfineco.2014.03.004

Healy, P. M.; Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: a review of the disclosure literature. *Journal of Accounting and Economics, 31*, 405–440. https://doi.org/10.1016/S0165-4101(01)00018-0

Hong, H., & Kacperczyk, M. (2010). Competition and Bias. *Quarterly Journal of Economics, 125*, 1683–1725. https://doi.org/10.1162/qjec.2010.125.4.1683

Isin, A. A. (2018). Tax avoidance and cost of debt: the case for loan-specifc risk mitigation and public debt fnancing. *Journal of Corporate Finance, 49*(1), 344–378. https://doi.org/10.1016/j.jcorpfin.2018.01.011

Kim, J. B., Li, Y., & Zhang, L. (2011). Corporate Tax Avoidance and Stock Price Crash Risk: Firm-Level Analysis. *Journal of Financial Economics*, 100,639–662. https://doi.org/10.1016/j.jfineco.2010.07.007

Klassen, K. J., Lisowsky, P., & Mescall, D. (2016). The Role of Auditors, Non-Auditors, and Internal Tax Departments in Corporate Tax Aggressiveness. *The Accounting Review*, *91*(1), 179–205. https://doi.org/10.2308/accr-51137

Kuo, N. T., & Lee, C. F. (2016). A potential beneft of increasing book-tax conformity: evidence from the reduction in audit fees. *Review of Accounting Studies, 21*(4),1287–1326. https://doi.org/10.1007/s11142-016-9367-x

Lanzana, A. P. (2004). *Relação entre disclosure e governança corporativa das empresas brasileiras.* [Dissertação de Mestrado em Administração, Faculdade de Economia e Administração e Contabilidade, Universidade de São Paulo, São Paulo].

Lev, B., & Gu, F. (2016). *The end of accounting and the path forward for investors and managers*. John Wiley & Sons. https://doi.org/10.1002/9781119270041

Li, W., Pittman, J., & Wang, Z. (2019). The determinants and consequences of tax audits: some evidence from China. *Journal of American Taxation Association, 41*(1), 91–122. https://doi.org/10.2308/atax-52134

Lietz, G. (2013). Tax Avoidance vs. Tax Aggressiveness: A Unifying Conceptual Framework. *Social Science Research Network – SSRN*. Rochester, NY. https://doi.org/10.2139/ssrn.2363828

Martinez, A. L. (2004). *Analisando os analistas: estudo empírico das projeções de lucros e das recomendações dos analistas de mercado de capitais para as empresas brasileiras de capital aberto*. [Tese Doutorado em Administração de Empresas, São Paulo, Escola de Administração de Empresas de São Paulo da Fundação Getúlio Vargas].

Martinez, A. L. (2011). The role of analysts as gatekeepers: Enhancing transparency and curbing earnings management in Brazil. *Revista de Administração Contemporânea*, *15*(4), 712–730. https://doi.org/10.1590/S1415-65552011000400009

Martinez, A. L. (2017). Agressividade tributária: um Survey da literatura. *Revista de Educação e Pesquisa em Contabilidade*, *11*, 106-124. https://doi.org/10.17524/repec.v11i0.1724

Martinez, A. L., & Silva, R. F. (2017). Agressividade Fiscal e o Custo de Capital de Terceiros no Brasil. *Revista de Gestão, Finanças e Contabilidade, 7*(1), 240–251. https://doi.org/10.18028/rgfc.v7i1.3452

Martinez, A. L., Ribeiro, A. C., & Funchal, B. (2019). Sarbanez Oxley Act and Taxation: A study of the effects of the tax aggressiveness of brazilian firms. *Contabilidade Vista & Revista*, *30*(1). https://doi.org/10.22561/cvr.v30i1.4525

Martinez, A. L., & Motta, F. P. (2020). Tax Aggressiveness of Government-Controlled Corporations in Brazil. *Revista Contemporânea de Contabilidade, 17*(43), 136–148. https://doi.org/10.5007/2175-8069.2020v17n43p136

Menichini, A. A. (2017). On the value and determinants of the interest tax shields. *Review of Quantitative Finance and Accounting, 48*,725–748. https://doi.org/10.1007/s11156-016-0567-z

Mills, L. F., & Newberry, K. J. (2001) The Influence of Tax and Nontax Costs on Book-Tax Reporting Differences: Public and Private Firms. *Journal of the American Taxation Association, 1*, 1-19. https://doi.org/10.2308/jata.2001.23.1.1

Mills, L. F. (1998). Book-Tax Differences and Internal Revenue Service Adjustments. *Journal of Accounting Research, 36*(2), 343–356. https://doi.org/10.2307/2491481

Oliveira, R. X. de, Goncalves, R. de S., Medeiros, O. R. de, & Fernandes, B. V. R. (2018). Cobertura de Analistas e Mercado Social Disclosure: Evidências em Empresas Brasileiros Abertas. *Advances in Scientific and Applied Accounting*, 024–046.

Prihandini, W. (2020). Analyst Coverage and Corporate Tax Aggressiveness in Indonesia Stock Exchange. *Binus Business Review*, *11*(1), Article 1. https://doi.org/10.21512/bbr.v11i1.5996

Schipper, K. (1991). Analysts' forecasts. *Accounting Horizons, 5*(4), 105-121. https://doi.org/10.2308/acch.1991.5.4.105

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics, 87*(3), 355–374. https://doi.org/10.2307/1882010

Tang, T. Y. H. (2011). Does Book-Tax Conformity Deter Opportunistic Book and Tax Reporting? An International Analysis. *European Accounting Review, 24*(3). https://doi.org/10.1080/09638180.2014.932245

Vasconcelos, C., Miyashiro, I., Reis, D., & Paulo, E. (2008). A influência da cobertura das empresas de rating sobre o gerenciamento de resultados das companhias abertas brasileiras. *Revista de Contabilidade e Organizações, 2*(3), 37–52. https://doi.org/10.11606/rco.v2i3.34712

Wilson, R. J. (2009). An examination of corporate tax shelter participants. *The Accounting Review, 84*(3), 969–999. https://doi.org/10.2308/accr.2009.84.3.969

Zimmermann, J., & Goncharov, I. (2006). Earnings management when incentives compete: the role of tax accounting in Russia. *Journal of International Accounting Research, 5*(1), 41–65. https://doi.org/10.2308/jiar.2006.5.1.41

CONFLICT OF INTERESTS

The authors declare no conflict of interest regarding this submitted work.

AUTHOR CONTRIBUTIONS

Roles	1st Author	2nd Author
Conceptualization	♦	
Data Curation		♦
Formal Analysis	♦	♦
Funding Acquisition		♦
Investigation	♦	♦
Methodology	♦	♦
Project Administration	♦	
Resources		♦
Software		♦
Supervision	♦	
Validation	♦	
Visualization	♦	♦
Writing – Original Draft	♦	♦
Writing – Review & Editing	♦	♦