

Relationship between managerial skill and tax aggressiveness of Brazilian companies

Relação entre habilidade gerencial e agressividade tributária de empresas brasileiras

Relación entre habilidad gerencial y agresividad tributaria de empresas brasileñas

Thaïsa Caroline Graupner*

Mestra em Ciências Contábeis na Universidade Regional de Blumenau (FURB)
Professora da Universidade do Estado de Santa Catarina (UDESC), Blumenau/SC, Brasil
thaisa.graupner@hotmail.com
<https://orcid.org/0000-0002-5272-5914>

Alini da Silva

Doutorado em Ciências Contábeis e Administração (FURB)
Professora do Programa de Pós-Graduação em Ciências Contábeis PPGCC FACC (UFRJ), Rio de Janeiro, RJ – Brasil
alini.silva@facc.ufrj.br
<https://orcid.org/0000-0002-7043-5566>

Marcia Zanievicz da Silva

Doutorado em Ciências Contábeis e Administração (FURB)
Professora do Programa de Pós-Graduação em Ciências Contábeis PPGCC (FURB), Blumenau/SC, Brasil
mzsilva@furb.br
<https://orcid.org/0000-0003-1229-7705>

Primary mailing address*

Rua Antônio da Veiga, 140, sala D-202, bairro Victor Konder, CEP: 89.012-900, Blumenau/SC, Brasil

Abstract

This study investigates the relationship between managerial skill and tax aggressiveness of Brazilian companies. Using data from Refinitiv Eikon® and the B3 website (2017-2021), 455 observations from 91 companies were examined. The analysis employed robust multiple linear regression, considering BTD (Book-Tax Difference) and TRAV (Tax Rate on Added Value) as metrics for tax aggressiveness. The results suggest that managerial skill is associated with tax aggressiveness, especially when measured by BTD. These findings contribute to the national literature on the role of managerial skills in tax decisions, highlighting that in environments with high tax burdens, skilled managers tend to adopt tax avoidance strategies. Such results may contribute to the development of policies aimed at promoting tax compliance and equity, fostering a fairer and more transparent business environment.

Keywords: Managerial Skill; Tax aggressiveness; Brazilian companies

Resumo

Este estudo investiga a relação entre habilidade gerencial e agressividade tributária de empresas brasileiras. Utilizando dados da Refinitiv Eikon® e do site da B3 (2017-2021), foram examinadas 455 observações de 91 empresas. A análise empregou regressão linear múltipla robusta, considerando como métricas para a agressividade tributária a BTD (*Book-Tax Difference*) e a TRAV (*Tax Rate on Added Value*). Os resultados sugerem que a habilidade gerencial está associada à agressividade tributária, especialmente quando medida pela BTD. Os achados ampliam a literatura nacional sobre o papel das habilidades gerenciais nas decisões fiscais, destacando que em ambientes com alta carga tributária, gestores habilidosos tendem a adotar estratégias de elisão fiscal. Tais resultados podem contribuir para a elaboração de políticas que visam promover a conformidade fiscal e a equidade tributária, promovendo um ambiente empresarial mais justo e transparente.

Palavras-chave: Habilidade Gerencial; Agressividade Tributária; Empresas Brasileiras

Resumen

Este estudio investiga la relación entre la habilidad gerencial y la agresividad tributaria de empresas brasileñas. Utilizando datos de Refinitiv Eikon® y del sitio web de B3 (2017-2021), se examinaron 455 observaciones de 91 empresas. El análisis empleó una robusta regresión lineal múltiple, considerando como métricas para la agresividad tributaria la BTD (*Book-Tax Difference*) y la TRAV (*Tax Rate on Added Value*). Los resultados sugieren que la habilidad gerencial está asociada a la agresividad tributaria, especialmente

cuando se mide por la BTB. Estos hallazgos amplían la literatura nacional sobre el papel de las habilidades gerenciales en las decisiones fiscales, destacando que en entornos con alta carga tributaria, los gestores habilidosos tienden a adoptar estrategias de elusión fiscal. Tales resultados pueden contribuir a la elaboración de políticas que busquen promover la conformidad fiscal y la equidad tributaria, fomentando un entorno empresarial más justo y transparente.

Palabras clave: Habilidad gerencial; Agresividad fiscal; Empresas brasileñas

1 Introduction

Tax aggressiveness emerges as a prominent feature in the contemporary corporate context, drawing significant attention from both the academic community and policymakers. This phenomenon can be conceptualized as the effort of organizational agents to minimize the tax burden, either through legitimate tax planning strategies, known as tax avoidance, or through questionable practices that violate tax laws, categorized as tax evasion (Armstrong et al., 2012; Alm et al., 2014; Khan et al., 2017). Given the relevance of this topic, there has been a growing stream of researchers investigating the underlying determinants of tax aggressiveness (Armstrong et al., 2012; McGuire et al., 2014; Francis et al., 2014; Allen et al., 2016; Francis et al., 2022).

Chi et al. (2017) highlighted that most studies on tax aggressiveness focus on firm-level characteristics or corporate governance mechanisms, overlooking, as the authors point out, the individual traits of managers, whose impact on corporate tax aggressiveness is substantial. This observation is clear, considering that business decisions are ultimately shaped by individuals, whose management styles play a determining role in shaping organizations' strategic and operational decisions (Bertrand & Schoar, 2003).

Dyreg et al. (2010) emphasize that managers' characteristics and skills are crucial determinants of corporate tax aggressiveness. Research shows that managerial ability significantly impacts various aspects of corporate decision-making, ranging from investment to accounting decisions (Rose & Shepard, 1997; Bertrand & Schoar, 2003; Demerjian et al., 2013; Francis et al., 2022). In this sense, investigating the relationship between managerial skills and tax aggressiveness can provide valuable insights for advancing the literature on the topic.

Managerial ability can be conceptualized as the manager's capacity to understand the company's economic dynamics and to make prudent and timely decisions, enabling them to optimize organizational resources into revenue (Demerjian et al., 2012; Hasan, 2017). Managers with strong managerial abilities tend to generate more substantial economic benefits for the organization, both through conventional operations and assertive tax strategies, thereby exploiting all opportunities for tax avoidance (Graham et al., 2014; Austin & Wilson, 2017). However, this argument overlooks important considerations, such as the reputational, political, and economic costs associated with tax aggressiveness. Evidence suggests that managers suffer reputational losses because of aggressive tax practices, indicating that reputation concerns act as limiting factors for companies and managers engaging in more assertive tax avoidance activities (Desai & Dharmapala, 2006; Hanlon & Slemrod, 2009; Chen et al., 2012; Graham et al., 2014; Austin & Wilson, 2017).

Particularly after the development of the managerial ability measure based on secondary data, developed by Demerjian et al. (2012), investigations into managerial ability have received increased attention from academics. However, the results obtained so far have not fully captured the breadth of the subject, especially regarding tax aggressiveness, which is the focus of this research. While tax aggressiveness is observed in companies across various jurisdictions, the complexity of the Brazilian tax system tends to heighten its possibilities to some extent. While tax incentives can have significant impacts on the organization, managers' managerial abilities emerge as relevant attributes in the company's decision-making regarding the adoption of aggressive tax practices. Considering this, the following research question was formulated: **what is the relationship between managerial ability and tax aggressiveness in Brazilian companies?** Therefore, the objective of this study is to analyze the relationship between managerial ability and tax aggressiveness in companies based in Brazil.

International literature (Park et al., 2016; Huang et al., 2017; Huang & Sun, 2017; Lee & Yoon, 2020) supports the notion that managers with more developed managerial skills tend to be associated with a lower incidence of aggressive tax avoidance practices, due to their ability to convert resources into economic benefits more efficiently through traditional operations. Moreover, it is argued that such managers, characterized by a solid professional reputation and greater employment opportunities, are less likely to engage in aggressive tax avoidance activities, given the perceived negative impacts on their reputation and career progression (Doukas & Zhang, 2020; Demerjian et al., 2020; Haider et al., 2021).

Conversely, a different stream in the international literature (Dyreg et al., 2010; Wu et al., 2012; Armstrong et al., 2015; Koester et al., 2017; Tang et al., 2017; Saragih & Hendrawan, 2021) suggests a positive association between managerial ability and tax aggressiveness. In the Brazilian context, research addressing these two variables is still in its infancy. Thus, this research aims to fill an existing gap in the national context by examining the relationship between managerial ability and tax aggressiveness in Brazilian companies. Brazil has a distinct economic, political, and regulatory environment compared to other

countries, which can significantly influence companies' management practices and tax strategies. Factors such as the complexity of the tax system, political instability, and economic volatility can generate unique dynamics not fully captured by international literature. Another distinctive aspect of this study is the use of the managerial ability metric developed by Demerjian et al. (2012), widely recognized in international research but still underexplored in the national context.

This study is justified by its contribution to the growing body of research on the impact of managerial characteristics, particularly managerial ability, on business decisions. Managerial ability has been the subject of significant study in the management literature and, more recently, has been incorporated into financial research, demonstrating its importance in influencing corporate performance and accounting decisions, including earnings quality and managerial earnings forecasts (Baik et al., 2011; Demerjian et al., 2012; Francis et al., 2022).

In this context, this research provides a new contribution to the debate on the influence of managerial ability on corporate tax decisions, particularly regarding tax aggressiveness, enriching the existing literature, especially within the scope of Agency Theory. The theory recognizes that shareholders seek to maximize returns and, therefore, encourage managers to act in line with their goals, with reducing the tax burden being a strategy that can increase profits distributable to shareholders. However, it is important to note that Agency Theory still presents limitations in its ability to provide a comprehensive explanation for corporate tax avoidance and the influence of managerial ability in this process. Moreover, the results of this study have important practical implications for regulatory public policies, promoting the development of policies aimed at fostering tax compliance and tax fairness, contributing to a fairer and more transparent business environment. They also provide relevant information to information users, including managers, investors, regulators, and policymakers, promoting corporate transparency and accountability.

2 Theoretical Frameworks

2.1 Agency Theory and Managerial Ability

Agency Theory, proposed by seminal authors such as Jensen and Meckling (1976), focuses on the agency relationship as a contract in which one or more individuals (principals) hire others (agents) to perform specific services on their behalf. However, this relationship is complex because both the principal and the agent are utility maximizers, which may lead the agent not to always pursue the interests of the principal. In this context, Santos et al. (2015) emphasize that efficient hiring seeks to align interests, reduce agency conflicts, and minimize the agent's opportunistic behavior at the expense of the principal's interests.

As noted by Nascimento and Reginato (2008), in smaller companies, where owners also act as managers, ownership and control are concentrated in the same person. However, as the organization grows, there arises a need to delegate control to managers or administrators, who, having their own interests, may seek to maximize their own utility, generating agency conflicts that hinder the maximization of the principal's wealth.

These conflicts arise from the discretionary decision-making activities carried out by managers, which can affect the interests of the company and its shareholders. To achieve superior performance, managers often implement risky strategies, and the ability to control such strategies is a determining indicator of the level of risk taken both by the manager and the organization (Simamora, 2021).

In this sense, managerial ability is defined as a set of skills, knowledge, and experiences that a manager possesses (Kor, 2003), significantly impacting assertive decision-making, strategy implementation, and organizational performance enhancement (Demerjian et al., 2012). In this context, managerial ability is considered one of the most crucial factors within an organization. Managerial capacity mainly arises from the experience and knowledge that the manager accumulates about the organizational environment, relevant technologies, and appropriate business strategies (Kor, 2003). As managers gain experience and knowledge, they become more capable of efficiently managing the organization's resources (Coff, 1999).

Although Demerjian et al. (2012) and Huang and Sun (2017) acknowledge that measuring managerial ability is challenging due to the non-directly observable nature of efficient resource management, Demerjian et al. (2012) developed and validated a quantitative measure for this ability. This measure is based on the premise that more skilled managers can generate more sales revenue from a given set of inputs (Demerjian et al., 2012). By capturing the efficiency with which managers convert organizational resources into sales, the authors argue that this proxy has superior explanatory power compared to other measures, such as director compensation, market reaction to news about director turnover, and company performance.

Despite the measure developed by Demerjian et al. (2012) being widely adopted in international studies, the national literature regarding managerial ability is considered nascent. Among the studies identified during the literature review, Moura et al. (2019) stand out for analyzing the relationship between managerial ability and losses in the recoverable value of goodwill, indicating that the managerial ability of managers varies by sector. Managers in the 'non-cyclical consumer' sector showed higher indicators of managerial ability, followed by managers in the 'health' and 'cyclical consumer' sectors'.

In international literature, managerial ability has attracted increasing interest among researchers. Baik et al. (2020) identified that managers with more developed managerial skills are less likely to engage in

earnings smoothing practices. Haider et al. (2021) found a positive relationship between managerial ability and accounting conservatism, suggesting that more skilled managers are more cautious due to the risk of damage to their reputation resulting from the production of low-quality earnings. Doukas and Zhang (2020) and Demerjian et al. (2020) observed that managers with greater managerial ability receive more substantial rewards throughout their careers, making them more likely to avoid behaviors that could harm their reputation.

Francis et al. (2013) and Koester et al. (2017) found that more skilled managers are less involved in tax evasion activities than their less skilled peers. This suggests that managers with higher managerial ability possess a deeper understanding of their organizations' businesses and are less inclined to adopt practices that could harm their reputation (Coff, 1997; Demerjian et al., 2012). Although studies have examined the relationship between managerial ability and financial reporting from various perspectives, the relationship between managerial ability and tax aggressiveness still yields conflicting results.

2.2 Tax Aggressiveness and Research Hypothesis

To increase profits and shareholder wealth, reducing the tax burden can be considered economically necessary (Huseynov & Klamm, 2012). Although a company's strategy to minimize or avoid taxes may benefit shareholders, it can conflict with public interests (Sikka, 2010). Studies highlight that tax avoidance practices are considered alternatives to optimize tax burdens, reducing costs and improving shareholder gains (Hanlon & Heitzman, 2010; Robinson et al., 2010). Based on the corporate tax decisions and behavior adopted by managers, it is possible to infer the level of tax aggressiveness of organizations (Huseynov & Klamm, 2012).

In the literature, tax aggressiveness is defined as the implementation of actions aimed at reducing the taxes to be paid through tax planning strategies (Martinez & Ramalho, 2017). Within this context, there are two modalities for reducing tax burdens: (i) through tax avoidance practices (legal); and (ii) through tax evasion (illegal) (Martinez & Ramalho, 2017). Thus, tax aggressiveness is related to management decisions aimed at decreasing tax payments through legal tax planning. As pointed out by Martinez (2017), managers implement tax strategies according to the aggressiveness profile of organizations, making it essential to understand the determinants of corporate tax aggressiveness.

Tax planning is a managerial decision-making activity; therefore, analyzing disparities in planning based on managerial skill emerges as a crucial issue to be investigated (Lee & Yoon, 2020). Managers play a crucial role in defining the level of tax avoidance, making managerial skill one of the determining factors of the tax strategies adopted by organizations (Park et al., 2016). From the traditional perspective, tax avoidance is seen to increase company value by reducing the resources paid to tax authorities. In this context, managerial skill is conceived as the ability to increase organizational value through the efficient use of available resources across all operations (Demerjian et al., 2012). More skilled managers tend to possess a deeper understanding of the business and a broader comprehension of the business environment. Consequently, these managers tend to employ tax avoidance strategies aimed at enhancing the company's value by reducing tax expenses and maximizing net profit.

Previous research highlights the crucial role of managerial skill in conducting corporate tax avoidance strategies, influencing the degree of a company's involvement in tax aggressiveness practices (Dyreg et al., 2010; Armstrong et al., 2015; Koester et al., 2017). It is argued that managers with strong managerial skills have a more in-depth understanding of the company's business environment, allowing them to maximize profits through the efficient allocation of the company's limited resources (Baik et al., 2013; Demerjian et al., 2013; Park, 2013) without resorting to aggressive tax practices. Thus, if the tax and non-tax costs associated with tax avoidance outweigh the benefits, highly skilled managers are likely to allocate resources to other management activities, such as marketing, investment, and financial activities, aiming to optimize the company's overall performance without adopting aggressive strategies.

However, studies show divergent results. Park et al. (2016), Huang et al. (2017), Huang and Sun (2017), and Lee and Yoon (2020), for example, identified a negative association between managerial skill and tax avoidance, suggesting that more skilled managers are associated with lower incidences of aggressive practices. This relationship is explained by the ability of these managers to convert resources into economic benefits more efficiently through traditional operations, reducing their incentive to engage in aggressive tax avoidance practices. Furthermore, they highlight that highly skilled managers tend to avoid such practices, considering the potential negative impact on their reputation.

Researchers such as Dyreg et al. (2010), Wu et al. (2012), Armstrong et al. (2015), Koester et al. (2017), Tang et al. (2017), and Saragih and Hendrawan (2021) argue that managerial skill is positively correlated with tax avoidance practices, influencing the level of organizational involvement in this type of strategy. They argue that more skilled managers possess a broader and deeper understanding of the business, the environment, and the company's opportunities, enabling them to conduct tax avoidance strategies more effectively (Koester et al., 2017). Thus, more competent managers can enhance the company's value by efficiently utilizing limited resources across all organizational operations, critically influencing tax planning and making it more aggressive (Demerjian et al., 2012).

Based on the literature, it is evident that the relationship between tax aggressiveness and

managerial skill, while evident, produces varied results regarding the direction of this relationship. Therefore, when formulating the research hypothesis it was decided not to assume a specific direction based on theoretical assumptions. **H1: Managerial skill is related to tax aggressiveness.**

In addition to the inconsistency of results in previous studies, the scarcity of empirical research in the Brazilian context, whose specific characteristics, such as complexity and tax burden, are notable, justifies the decision not to establish a prior direction based on the existing literature. Thus, it is expected that this study will present evidence and indicate a trend for the context of publicly traded Brazilian companies.

3 Methodological Procedures

Considering the objective of analyzing the relationship between managerial skill and tax aggressiveness of Brazilian companies, the study adopted a descriptive approach regarding objectives. Concerning procedures, the research is characterized as documentary and quantitative with respect to the problem's approach. The initial sample consisted of publicly traded companies listed on B3 and active during the period from 2017 to 2021, excluding those in the financial sector and those lacking essential information. Financial sector companies, such as banks and financial institutions, have unique operational characteristics and business structures and are subject to specific financial and tax regulations, which can influence their managerial decisions and tax strategies differently compared to companies in other sectors. Additionally, it is emphasized that the Managerial Skill (HG) metric incorporates data related to the cost of goods sold, a metric that does not exist in the financial context.

The selected time frame is also justified by the limited availability of data. Expanding the research to periods prior to 2017 would result in the exclusion of a substantial proportion of the sample due to the inaccessibility of the required data, particularly for calculating the Managerial Skill (HG) variable. Thus, the final sample comprised 91 companies active in the Refinitiv Eikon® database, totaling 455 company/year observations with balanced data, as shown in Table 1.

Table 1
Sample Formation

Description	Sample
Number of companies listed on B3	481
Exclusion of financial institutions and insurance companies	(78)
Exclusion of companies without data in any year of the analyzed period	(312)
Number of companies in the sample	91
Number of company/year observations (91 companies x 5 years)	455

Table 2 presents the composition of the economic sectors of the sample used in the study.

Table 2
Composition of Economic Sectors, in descending order of representativeness in the sample

Description of Economic Sectors	Quantity	Proportion
Industries	18	19,8%
Basic Materials	14	15,4%
Real Estate	6	6,5%
Technology	4	4,4%
Public Utility Services	4	4,4%
Academic and Educational Services	3	3,3%
Energy	2	2,2%
Industries	18	19,8%
Basic Materials	14	15,4%
Real Estate	6	6,5%
Total	91	100%

To proceed with the analysis, the collected data were initially structured in spreadsheets using Excel® software to organize them for the proposed calculations. Subsequently, descriptive statistical analyses and correlation analysis were conducted. Finally, the data were subjected to multiple linear regression analysis using STATA software. Table 3 provides a detailed description of the variables considered in the study.

According to Table 3, tax aggressiveness was measured by two variables: Book-Tax Difference (BTD) and effective tax rate on added value (TRAV – Tax Rate on Added Value). The BTD consists of the difference between accounting profit and taxable profit, scaled by total assets. As is commonly the case in tax-related research, access to companies' income tax returns is not available, which is why taxable income must be estimated based on the reported income tax and social contribution expenses. In this case, taxable income was estimated by dividing the total tax expense by the statutory rate of 34%.

Table 3
Description of Variables

Variable / Definition		Operationalization	Collection	Authors
Dependent Variables				
BTD	Book-Tax Differences	$\frac{(LAIR_{it} - [Expent_{tax_{it}}])/0,34}{Assets_{it}}$	B3	Hanlon e Heitzman (2010); Ramalho e Martinez (2014)
TRAV	Tax Rate on Added Value	$\frac{Imp_dist_{it}}{Value_added_a_dist_{it}}$	B3	Martinez e Motta (2020)
Independent Variable				
HG	Managerial Skill	ϵ_{it} = Equation residue 2 (proxy for management skills)	Refinitiv Eikon®	Demerjian et al. (2012)
Control Variables				
TAM	Size	$Ln(Total\ Assets_{it})$	Refinitiv Eikon®	Chen et al. (2010); Ramalho e Martinez (2014); Martinez et al. (2014)
ROA	Return on assets	$\frac{EBIT_{it}}{Total\ Assets_{i,t-1}}$	Refinitiv Eikon®	Chen et al. (2010); Wu et al. (2012); Ramalho e Martinez (2014); Martinez et al. (2014);
BIG4	Big Four Audit Firm	Dummy equals 1 if the audit firm is Big Four and 0 otherwise it	Refinitiv Eikon®	Martinez et al. (2014); Marzuki e Syukur (2021)
END	Indebtedness	$\frac{Total\ Liabilities_{it}}{Total\ Assets_{it}}$	Refinitiv Eikon®	Brigham e Houston (2001)

Notes: LAIR: Earnings before income tax. Desp_trib = total combined expense (income tax + social contribution to net income). Des_trib_corr = current combined expense. Imp_dist = distribution for taxes, fees, and contributions; Valor_adic_tot_a_dist = total added value to distribute. DFP: Standardized Financial Statements available on the B3 website; DRE: Statement of Income; BP: Balance Sheet; DVA: Statement of Added Value.

The TRAV, on the other hand, is a measurement of tax aggressiveness based on the Statement of Added Value (DVA), consisting of dividing the amount distributed as taxes by the total added value to distribute (Martinez & Motta, 2020). This is a measure not available in the international literature, as the obligation of the DVA is specific to the Brazilian context. In a way, the TRAV captures the tax burden to which the company is subject.

The TRAV has some peculiarities that should be highlighted. One is the fact that this metric, unlike the BTM, captures not only the taxes on profit but also other federal taxes, such as taxes on revenue and social security contributions, as well as state and municipal taxes. Another peculiarity is that the company must report in the DVA, as distributions for taxes, only the amounts owed or already collected. It is worth noting that the interpretation of the BTM differs from the interpretation of the TRAV: the higher the BTM, the greater the tax aggressiveness, while the higher the TRAV, the lower the aggressiveness. For the regression using TRAV, observations with inconsistent values of the proxy were excluded, i.e., observations in which the total added value to distribute was zero, which makes it impossible to calculate TRAV. Since the BTM variable is used in Brazil and internationally, the main analysis of the study considers the results based on this variable, while the discussion based on TRAV is presented as an ancillary analysis.

The independent variable used in this study is managerial skill. According to Demerjian et al. (2012), measuring managerial skill requires two steps. First, a data envelopment analysis (DEA) to measure the efficiency of companies in relation to their counterparts in the same subsector. The DEA uses a single output (Output) and seven inputs (Input) according to Equation 1.

$$max_v \theta = \frac{Sales_{it}}{v_1 CPV_{it} + v_2 DVA_{it} + v_3 IMO_{it} + v_4 LEO_{it} + v_5 P\&D_{it} + v_6 AGL_{it} + v_7 OAIN_{it}}$$

Equation (1)

Where:

Output:

Sales

Input:

CPV_{it}: Cost of goods sold;

DVA_{it}: Selling and administrative expenses;

IMO_{it}: Fixed assets;

LEO_{it}: Operating leases;

P&D_{it}: Research and development expenses;

AGI_{it}: Acquired goodwill;

OAIN_{it}: Other intangible assets.

After finding the efficiency of the companies, the second necessary step is to identify the residue based on the following Equation 2.

$$EE_{it} = \alpha_0 + \alpha_1 LN(AT)_{it} + \alpha_2 PM_{it} + \alpha_3 FCL_{it} + \alpha_4 LN(ID)_{it} + \alpha_5 CSN_{it} + \alpha_6 IVC_{it} + \sum sector_fixed_effect_t + \varepsilon_{it}$$

Equation (2)

Where:

EE_{it} = efficiency of company *i* in period *t*;

LN(AT)_{it} = natural logarithm of total assets of company *i* in period *t*;

PM_{it} = market share of company *i* in period *t*;

FCL_{it} = free cash flow of company *i* in period *t*;

LN(ID)_{it} = natural logarithm of the age of the company;

CSN_{it} = concentration indicator of company business segment *i* in period *t*;

IVC_{it} = foreign currency adjustment indicator of company *i* in period *t*;

ε_{it} = residual of the equation (proxy for managerial skill).

Total assets are the book value of assets. Market share is the percentage of sales of companies relative to total sales in each subsector. Free cash flow is the cash flow from operations minus capital expenditures, where a dummy variable is assigned, being 1 if free cash flow is positive and 0 otherwise. Age is the number of years companies have been listed on the B3 Stock Exchange. Concentration by business segment is the average value of concentration by segment. The foreign currency indicator is a dummy variable that scores 1 if the company reports a value different from zero for foreign currency adjustment and 0 otherwise.

Finally, the study adopted control variables such as size, return on assets, Big Four, and indebtedness. Companies with higher ROA have greater incentives to engage in aggressive tax planning activities (Chen et al., 2010). Companies with higher total assets (larger TAM) tend to avoid tax avoidance due to the social, political, and economic costs involved; thus, size negatively affects tax aggressiveness (Zimmerman, 1983). The dummy variable BIG4 indicates whether the company was audited by one of the four largest auditing firms in the world (Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers), which suggests greater external monitoring that would limit tax aggressiveness. Furthermore, a positive relationship between indebtedness and tax aggressiveness can be assumed. Martinez and Martins (2016) have already identified a positive relationship between indebtedness and the aggressiveness of organizations.

Due to the existence of outliers, which could distort the research results, the variables BTD, TRAV, Size, ROA, and Indebtedness were winsorized at 1%. Thus, the models of the OLS linear regression were operationalized, controlling for year and sector, according to the equations 3 and 4.

$$BTD_{it} = \beta_0 + \beta_1 HG_{it} + \beta_2 TAM_{it} + \beta_3 ROA_{it} + \beta_4 BIG4_{it} + \beta_5 END_{it} + \sum sector_fixed_effect_t + \sum year_fixed_effect_i + \varepsilon$$

Equation 3

$$TRAV_{it} = \beta_0 + \beta_1 HG_{it} + \beta_2 TAM_{it} + \beta_3 ROA_{it} + \beta_4 BIG4_{it} + \beta_5 END_{it} + \sum sector_fixed_effect_t + \sum year_fixed_effect_i + \varepsilon$$

Equation 4

Where:

BTD_{it} = Book-Tax Differences;

TRAV_{it} = Tax Rate on Added Value;

HG_{it} = Managerial Skill;

TAM_{it} = Size;

ROA_{it} = Return on Assets;

BIG4_{it} = Big Four Audit Firm;

END_{it} = Indebtedness.

4 Analysis and Discussion of Results

This section is intended to present and interpret the obtained results. Initially, descriptive statistics of the variables addressed in the research are provided. Next, the correlation matrix and the regression results are presented, aligned with the objectives outlined in the investigation scope. Table 4 presents the descriptive statistics for the dependent variables (BTD and TRAV), the independent variable of interest (HG), and the control variables analyzed in the study.

Table 4
Descriptive statistics of the research variables

Variables	Mean	σ	Minimum	Maximum
BTD	0.089	0.165	-0.400	1.049
TRAV	0.224	0.626	-10.894	1.314
HG	4.40e-10	0.149	-0.421	0.345
TAM	15.568	1.753	9.625	20.710
ROA	0.052	0.099	-0.376	0.573
END	0.633	0.322	0.092	3.323

Legend: σ : standard deviation. BTD: book-tax differences. TRAV: tax rate on added value. HG: managerial ability. TAM: size. ROA: return on assets. END: indebtedness.

As evidenced in Table 4, managerial ability shows a standard deviation of 0.149, below the average. The BTD variable shows a positive mean of 0.089, indicating that, on average, companies report higher accounting profit than taxable profit, which may suggest aggressive tax behavior. Meanwhile, TRAV shows a positive mean of 0.224, confirming this fact, as it is lower than the combined nominal IRPJ/CSLL rate (34%). The HG variable had a mean of 4.40e-10, with a low standard deviation, a minimum of -0.421, and a maximum of 0.345. Regarding the control variables, TAM, ROA, BIG4, and END recorded positive means of 15.568, 0.052, 0.821, and 0.633, respectively. Tables 5 and 6 present, respectively, the Pearson correlation matrix in the lower triangle and the Spearman correlation matrix in the upper triangle for samples linked to BTD and TRAV, respectively.

Table 5
Pearson and Spearman correlations for the sample linked to the BTD variable

Variable	BTD	HG	TAM	ROA	BIG4	END
BTD	1.00*	0.362*	-0.091	0.938*	0.044	-0.292*
HG	0.341*	1.00	-0.007	0.314*	-0.219*	0.017
TAM	-0.070	-0.002	1.00	-0.084	0.125*	0.336*
ROA	0.935*	0.316*	-0.026	1.00	0.046	-0.390*
BIG4	0.090	-0.206*	0.149*	0.093*	1.00	-0.016
END	-0.251*	0.081	0.055	-0.371*	-0.151*	1.00

Significance levels: * $p < 0.05$. BTD: book-tax differences. HG: managerial ability. TAM: size. ROA: return on assets. BIG4: Big Four. END: indebtedness.

The correlation matrix reveals that the BTD variable shows a positive and statistically significant correlation with managerial ability, while ROA demonstrates a negative and statistically significant correlation with indebtedness in both the lower and upper triangles. Additionally, a positive and significant correlation is identified between managerial ability and ROA, and a negative and significant correlation with the presence of Big Four companies, equally in both triangles. However, these correlations are weak and significant only at the 5% level.

Table 6
Pearson and Spearman correlation for the TRAV variable

Variable	TRAV	HG	TAM	ROA	BIG4	END
TRAV	1.000*	0.095*	-0.047*	0.102*	-0.050*	-0.059*
HG	0.113*	1.000*	-0.007*	0.341*	-0.219*	0.017*
TAM	-0.026*	-0.002*	1.000*	-0.084*	0.125*	0.336*
ROA	0.056*	0.315*	-0.026*	1.000*	0.046*	-0.390*
BIG4	-0.052*	-0.206*	0.149*	0.093*	1.000*	-0.016*
END	0.062*	0.081*	0.055*	-0.371*	-0.151*	1.000*

Significance levels: * $p < 0.05$. TRAV: tax rate on added value. HG: managerial ability. TAM: size. ROA: return on assets. BIG4: Big Four. END: indebtedness.

The correlation matrix data reveal that, in contrast to the previous table, the TRAV variable shows a positive and statistically significant correlation only with the managerial ability variable in the lower triangle. In the upper triangle, TRAV exhibits a positive and significant correlation with managerial ability and ROA. Additionally, there is a positive and significant correlation between managerial ability and ROA and a

negative and significant correlation with Big Four companies in both triangles, as evidenced in Table 5.

The correlation matrices suggest a relationship between managerial ability and tax aggressiveness, corroborating hypothesis H1. However, it is important to note that these results are preliminary and should not be considered definitive for establishing the relationship between variables. In general terms, the data from Tables 5 and 6 indicate that there is no substantial correlation between the independent variables analyzed, ruling out possible multicollinearity problems in subsequent regression models.

The regression results for the sample related to the BTD variable are presented in Table 7. It is relevant to highlight that tests were conducted to verify the presence of autocorrelation in the residuals and multicollinearity among the variables, which did not indicate problems, as evidenced by the Durbin-Watson and VIF test values. To estimate the coefficients, robust regression with fixed effects for time and sector was adopted, due to the detection of data heteroscedasticity by the White Test.

Table 7
Regression results using BTD as a proxy for tax aggressiveness

Variables	Dependent Variable: BTD		
	Coefficient	t-Statistic	VIF
Constant	0.005	0.866	-
Managerial Ability (HG)	0.040	0.043**	1.27
Size	-0.005	0.027**	1.34
ROA – Return on Assets	1.593	0.000***	1.55
Big Four	0.012	0.144	1.30
Debt	0.057	0.000***	1.28
Model significance		0.000***	
R ²		89.470	
Time and sector control		Sim	
DW		2.051	
N		455	

Legend: BTD: Book-Tax Differences. Significance levels: ** $p < 0.05$; *** $p < 0.01$.

The results reveal that the model based on BTD demonstrates adequate global significance (p -value=0.000) and high explanatory power, as evidenced by the R² of 89.47%. Despite the regression results, expressed by the coefficient of determination (R²), indicating a satisfactory level of explanation considering the selected variables, it is important to note that the observed explanatory power may be due to the omission of variables such as Time Since IPO, Market-to-Book, Intangibles, Fixed Assets, and R&D Expenses, for which further research is suggested, provided that multicollinearity issues are avoided. The Durbin-Watson statistic, slightly above 2, indicates the absence of autocorrelation in the residuals. The analysis was performed with sector and year controls, revealing that all sectors were significant in the model using the BTD variable (ranging from 0.000 to 0.026). These results suggest that the sector plays a significant role in the level of tax aggressiveness of firms.

The analysis of Table 7 reveals a positive and significant coefficient for the HG variable (0.040), indicating a positive relationship between managerial ability and tax aggressiveness, supporting H1 and confirming that managerial ability is associated with increased tax aggressiveness in Brazilian companies. The coefficient for the ROA variable is also positive and significant (1.593), suggesting that higher returns on assets are linked to greater tax aggressiveness. Additionally, the leverage variable has a positive and significant coefficient (0.057), indicating that more aggressive organizations are more likely to rely on third-party financing. On the other hand, the coefficient for the size variable is negative and significant (-0.005), suggesting that larger companies tend to be less tax aggressive.

These findings align with the literature, highlighting that managerial ability is positively correlated with book-tax differences (BTD), as evidenced in previous studies (Dyreg et al., 2010; Wu et al., 2012; Armstrong et al., 2015; Koester et al., 2017; Tang et al., 2017; Lee & Yoon, 2020; Saragih & Hendrawan, 2021). The positive and significant result between BTD and managerial ability suggests that managerial ability plays a crucial role in determining tax avoidance practices, demonstrating that greater managerial capacity is related to higher tax avoidance. Studies such as Lee & Yoon (2020) corroborate these findings, showing that managers play a crucial role in the tax planning of organizations, closely linked to tax avoidance practices.

More capable managers are associated with higher tax avoidance due to their deep understanding of the business, the corporate environment, and available opportunities, allowing them to conduct tax avoidance strategies more effectively (Koester et al., 2017). Thus, the results of this study are consistent with the traditional view of tax avoidance and managerial ability, where more skilled managers possess a greater ability to enhance company value by efficiently utilizing limited resources across operations, including through tax aggressiveness (Demerjian et al., 2012).

According to Agency Theory, principals tend to compensate agents more to maximize their goals, especially profitability. One strategy adopted by the agent to meet these goals, even if contrary to legal principles, is tax avoidance, as reducing tax payments means higher profit shares for shareholders.

However, Agency Theory still shows limitations in its ability to offer a comprehensive explanation for corporate tax avoidance and managerial ability. The results for this variable contribute to the literature, demonstrating that more skilled managers not only have the potential to optimize company profitability but also can control tax avoidance to a level where associated risks do not outweigh the expected benefits.

Regarding company size, the results show that, in the analyzed context, the outcome is negative and significant, indicating that larger firms tend to be less aggressive in their tax practices. This finding is consistent with Zimmerman's (1983) findings, suggesting that companies with higher total assets are less prone to tax avoidance due to associated social, political, and economic costs. Additionally, larger companies have more complex organizational structures, more defined hierarchies, and a stronger managerial workforce (Brockman et al., 2016), which generally results in lower tax aggressiveness. Moreover, the larger the company, the stronger the managerial ability, as well as the manager's compensation (Gabaix & Landier, 2008), which may contribute to lower tax aggressiveness in the organization.

Additionally, prior analyses indicate a positive correlation between organizational performance, represented by Return on Assets (ROA), and companies' propensity to adopt aggressive tax planning strategies. This finding aligns with previous studies, such as Chen et al. (2010) and Saragih & Hendrawan (2021), which found that companies with higher ROA tend to engage in more aggressive tax planning practices.

Furthermore, for the present sample, it is observed that the more leveraged a company is, the more likely it is to engage in tax aggressiveness. This result aligns with the findings of Martinez and Martins (2016), who pointed out that more indebted company, tend to adopt more aggressive tax strategies.

In the Brazilian context, tax aggressiveness can be evaluated both by BTD and TRAV, the latter measured based on DVA data. The following is an auxiliary analysis of results using TRAV as the dependent variable. It should be noted that, for this regression, the interpretation of coefficient signs should be done inversely since the variable measures tax aggressiveness inversely, meaning that the higher the TRAV, the lower the tax aggressiveness.

The results of the analysis using TRAV as the dependent variable are presented in Table 8. Tests to detect autocorrelation in the residuals and multicollinearity among variables revealed no issues, as indicated by the Durbin-Watson test values and VIF. To estimate the coefficients, a robust regression approach with fixed time and sector effects was used due to the detection of heteroscedasticity in the data by the White Test.

Table 8
Regression results using TRAV as a proxy for tax aggressiveness

Variables	Dependent variable: TRAV		
	Coefficient	t-Statistic	VIF
Constant	0.302	0.001	-
Managerial Ability (HG)	0.135	0.017**	1.27
Size	-0.016	0.007***	1.34
ROA – Return on assets	0.087	0.554	1.55
Big Four	0.039	0.098	1.30
Debt	0.035	0.228	1.28
Model significance		0.000***	
R ²		21.950	
Time and sector control		Sim	
DW		2.186	
N		455	

Legend: TRAV: tax rate on added value. Significance levels: ** p<0.05; *** p<0.01.

The findings reveal that the model based on TRAV also shows adequate global significance (p-value=0.000), presenting a determination coefficient (R²) of 21.95%. By analyzing the R² of this model with TRAV, it is corroborated that the main analysis should be based on the results of the BTD model, as the R² was much higher, at 89%. The analysis was performed with sector and year controls, identifying that the energy, industry, real estate, technology, and public utility sectors showed significance in the model using the TRAV variable (ranging between 0.000 and 0.015). These results indicate that the sector plays an influential role in the level of corporate tax aggressiveness.

The positive and statistically significant coefficient attributed to the managerial ability variable suggests an inverse relationship with tax aggressiveness, as a higher TRAV is correlated with lower aggressiveness. This finding confirms H1, although it contradicts the expectations derived from the analysis based on BTD, where managerial ability is expected to increase tax aggressiveness. Thus, the present study contributes to the national literature by presenting new evidence indicating the potential capacity of managerial ability to mitigate tax aggressiveness when using the metric developed by Martinez & Motta (2020). It is noted that more skilled managers can optimize production through the efficient allocation of the company's limited resources without resorting to aggressive strategies that entail reputational costs, as

highlighted by Baik et al. (2013), Demerjian et al. (2013), and Park (2013).

On the other hand, the coefficient related to the size variable was negative and statistically significant (-0.016), indicating that the company's size is inversely related to TRAV. Thus, contrary to the expectations of the reviewed literature, larger companies tend to adopt more aggressive tax planning practices, even considering the social, political, and economic costs associated with such strategies. It is noteworthy that the results obtained for the TRAV variable differ from those obtained using the BTM metric to measure tax aggressiveness. This contradiction highlights the importance of the implications arising from the choice of the metric used to analyze tax aggressiveness. TRAV, specifically, is a Brazilian metric based on the DVA to measure tax aggressiveness. The separate analysis of the two metrics used to quantify the variables determining corporate tax aggressiveness revealed discrepancies in the results, as summarized in Table 9.

Table 9

Comparative regression results using TRAV and BTM as proxies for tax aggressiveness

Variables	Dependent variable: TRAV			Dependent variable: BTM		
	Coefficient	t-Statistic	VIF	Coefficient	t-Statistic	VIF
Constant	0.302	0.001	-	0.005	0.866	-
Managerial Ability (HG)	0.135	0.017**	1.27	0.040	0.043**	1.27
Size	-0.016	0.007***	1.34	-0.005	0.027**	1.34
ROA – Return on assets	0.087	0.554	1.55	1.593	0.000***	1.55
Big Four	0.039	0.098	1.30	0.012	0.144	1.30
Debt	0.035	0.228	1.28	0.057	0.000***	1.28
Model significance			0.000***			0.000***
R ²			21.950			89.470
Time and sector control			Sim			Sim
DW			2.186			2.051
N			455			455

Legend: Significance levels: ** p<0.05; *** p<0.01.

It is observed that the TRAV metric shows a relationship with only two variables (managerial ability and size); however, due to the methodological approach adopted, this relationship is inverse, indicating that both variables are related to a reduction in tax aggressiveness. On the other hand, when using the BTM metric to assess tax aggressiveness, the relationship is statistically significant for a larger number of variables - managerial ability, size, ROA, and debt - and these relationships follow the same direction.

Thus, in terms of academic contribution, by using the BTM variable, widely recognized and used internationally, this study reinforces previous findings that also used similar metrics, indicating that managerial ability can, indeed, drive aggressive tax behaviors in organizations (Dyreg et al., 2010; Wu et al., 2012; Armstrong et al., 2015; Koester et al., 2017; Tang et al., 2017; Saragih & Hendrawan, 2021). However, this study offers an additional contribution by evidencing the divergence of results, both in terms of the direction and significance of the relationships, due to the metric adopted to measure the dependent variable, which raises greater interest and the need for a deeper understanding of this phenomenon.

The discrepancy in results between the TRAV and BTM variables can be attributed to conceptual and operational differences between these metrics. BTM measures the difference between accounting profit and taxable income, reflecting variations between accounting and tax methods of determining results. On the other hand, TRAV represents the variation in the effective tax rate, considering the difference between taxes effectively paid and taxable income (Martinez & Motta, 2020).

Furthermore, BTM captures tax aggressiveness on income taxes based on the income statement, while TRAV captures not only taxes on income but also other federal taxes, such as turnover taxes and social security contributions, as well as state and municipal taxes, whether amounts are owed or already collected.

These methodological differences may lead to contrasting results, as BTM focuses on discrepancies between accounting and taxable results, while TRAV analyzes the actual variation in effective tax rates. Therefore, while BTM may capture accounting distortions that do not necessarily reflect the fiscal reality of companies, TRAV may provide a more direct view of corporate tax practices. Thus, the research offers a significant contribution to national literature by presenting new evidence suggesting the potential capacity of managerial ability to mitigate tax aggressiveness, especially when using the metric developed by Martinez & Motta (2020), highlighting the importance of considering different methodological approaches in the analysis of this complex phenomenon.

5 Conclusions

This study aimed to analyze the relationship between managerial ability and tax aggressiveness in Brazilian companies, contributing to the literature on the determinants of tax stance and managerial competence. By adopting the BTM metric as a proxy for analysis, due to the model's explanatory power of 89% and in accordance with the standards established by international literature, it is observed that managers with higher ability can acquire and use information more effectively for business decision-making.

In this context, managerial ability presents a positive relationship with the tax aggressiveness of organizations. Therefore, Hypothesis H1 is supported, suggesting that managerial ability is related to tax aggressiveness, indicating a positive relationship between these variables. Managers play a strategic role in formulating organizational decisions, including those related to tax practices. This empirical analysis aligns with existing literature, which suggests that managerial ability tends to increase the tax aggressiveness of organizations, as well as the observed relationship between higher Return on Assets (ROA) and a greater propensity for tax aggressiveness.

Regarding the results obtained with the BTM metric, consistency with previous studies is observed, indicating that companies with higher levels of debt tend to adopt more aggressive tax practices, while company size has a negative relationship with aggressiveness. Specifically, larger companies tend to engage less in tax avoidance strategies. This finding suggests that the social, political, and economic costs associated with such tax practices play a significant role in organizational decisions, as the increase in company size may lead to higher costs, thus influencing the tax policies adopted. The results of this variable also contribute to the literature on Agency Theory, demonstrating that more skilled managers not only have the potential to optimize company profitability but also can control tax avoidance at a level where the associated risks do not outweigh the expected benefits.

Furthermore, some authors argue that the increase in company size is correlated with greater managerial ability and, consequently, with more substantial compensation for managers (Gabaix & Landier, 2008), which could reduce the need to seek performance improvements through aggressive tax strategies. However, when analyzing the regression results using the TRAV variable as a metric for aggressiveness, the results show an opposite direction: managerial ability is related to a reduction in tax aggressiveness, while company size is related to an increase in this aggressiveness. Although previous research has found similar results, this analysis contradicts the findings observed when using the BTM metric. This contradiction is not only evident in the direction of the relationships but also in the lack of correlation between TRAV and variables such as debt and ROA.

Therefore, although part of the literature converges with the relationships evidenced by the TRAV metric, as previously discussed, the results for the analyzed sample are surprising and highlight that the choice of metric for measuring tax aggressiveness, whether TRAV or BTM, has significant implications for the results, suggesting the need for further investigation on the subject.

In this study, the results obtained through the BTM variable were emphasized due to their breadth and relevance, enabling comparisons with studies conducted in international contexts. This choice was mainly due to the conceptual and operational differences between the BTM and TRAV metrics. Methodological differences can lead to contrasting results, and additional research in this area could benefit from these findings to further contribute to the existing literature. Thus, the research contributes to the field of tax aggressiveness on profits due to the BTM metric.

Notably, a significant relationship is evidenced between managerial ability and the level of tax aggressiveness adopted by the company. This ability is considered a strategic tool to boost organizational performance, within legal limits, as tax aggressiveness is a form of tax avoidance. Thus, by presenting substantial evidence from Brazilian companies, especially those subject to high tax burdens, this study contributes to the national and international body of knowledge, aligning with previous research that indicates a relationship between managerial ability and tax aggressiveness practices. It is suggested that in environments with high tax burdens, skilled managers are more likely to adopt tax avoidance strategies on profits, such as tax aggressiveness, especially in smaller companies.

Despite the methodological rigor employed, the research presents some limitations. One is related to the restrictions in interpreting the results obtained in this study. The methodological differences in the construction of the TRAV and BTM variables may have contributed to the contrasting results found. It is important to incorporate different methodological approaches in the analysis of this complex phenomenon, suggesting the need for additional research that explores these divergences. Furthermore, the use of data collected during the pandemic period may have influenced the results, given the volatility experienced by companies during that time.

It is therefore recommended to investigate the impact of managerial ability on other variables, such as business performance, organizational life cycle, and cost asymmetry, as well as to examine the role of institutional contexts and other related factors. Also, the error measured by the managerial ability equation may contain several other elements beyond those included in the model, which may lead to estimation bias, and consequently, the estimator (beta) of equations (3) and (4) may also be biased. Thus, it is recommended in future studies to improve this equation developed by Demerjian et al. (2012) by testing other variables in addition to those presented by the base authors. Moreover, it is suggested to study managerial ability through other strands of study, such as qualitative approaches, and other methods that could assist in the development of other models beyond the one used in the present research.

This research did not aim to analyze the specific elements by sector, but by controlling for the segment in the regressions, sectoral influence on tax aggressiveness was observed, suggesting that future studies focus on the analysis of a specific sector to explore the relationship between managerial ability and

tax aggressiveness. This approach will allow a more detailed understanding of the impact of managerial competencies within the sectoral context, contributing to a more precise and contextualized analysis.

References

- Allen, A., Francis, B. B., Wu, Q., & Zhao, Y. (2016). Analyst coverage and corporate tax aggressiveness. *Journal of Banking and Finance*, 73, 84-98. <https://doi.org/10.1016/j.jbankfin.2016.09.004>
- Alm, J., Martinez-vazquez, J., & McClellan, C. (2014). Corruption and firm tax evasion. *International Center for Public Policy*, 124(1), 1–52. <https://doi.org/10.1016/j.jebo.2015.10.006>
- Armstrong, C. S., Blouin, J. L., Jagolinzer, A. D., & Larcker, D. F. (2015). Corporate governance, incentives, and tax avoidance. *Journal of Accounting and Economics*, 60(1), 1–17. <https://doi.org/10.1016/j.jacceco.2015.02.003>
- Armstrong, C., Blouin, J., & Larcker, D. (2012). The incentives for tax planning. *Journal of Accounting and Economics*, 53(1–2), 391-411. <https://doi.org/10.1016/j.jacceco.2011.04.001>
- Austin, C. R., & Wilson, R. J. (2017). An examination of reputational costs and tax avoidance: Evidence from firms with valuable consumer brands. *The Journal of the American Taxation Association*, 39(1), 67-93. <https://doi.org/10.2308/atax-51634>
- Baik, B., Choi, S., & Farber, D. B. (2020). Managerial ability and income smoothing. *Account Rev* 95(1), 22. <https://doi.org/10.2308/accr-52600>
- Baik, B., Chae, J., Choi, S., & Farber, D. B. (2013). Changes in operational efficiency and firm performance: a frontier analysis approach. *Contemporary Accounting Research*, 30(3), 996–1026. <https://doi.org/10.2139/ssrn.1681748>
- Baik, B., Farber, D., & Lee, S. (2011). CEO ability and management earnings forecasts. *Contemporary Accounting Research*, 28(5), 1645-1668. <https://doi.org/10.1111/j.1911-3846.2011.01091.x>
- Bertrand, M., & Schoar, A. (2003). Managing with style: The effects of managers on firm policies. *The Quarterly Journal of Economics*, 118(4), 1169-1208. <https://doi.org/10.2139/ssrn.376880>
- Brigham, E. F., & Houston, J. F. (2001). *Manajemen Keuangan*. Buku 1 ed. 8. Jakarta: Erlangga.
- Brockman, P., Lee, H. S. G., & Salas, J. M. (2016). Determinants of CEO compensation: Generalist-specialist versus insider-outsider attributes. *Journal of Corporate Finance*, 39, 53–77. <https://doi.org/10.1016/j.jcorpfin.2016.04.007>
- Chen, C., Huang, H., Li, Y., & Stanfield, J. (2012). The effect of hedge fund activism on corporate tax avoidance. *The Accounting Review*, 87(5), 1493-1526. <https://doi.org/10.2139/ssrn.1759994>
- Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics*, 95, 41-61. <https://doi.org/10.1016/j.jfineco.2009.02.003>
- Chi, S., Huang, S. X., & Sanchez, J. (2017). CEO inside debt incentives and corporate tax sheltering. *Journal of Accounting Research*, 55(4), 837-876. <https://doi.org/10.1111/1475-679X.12169>
- Coff, R. W. (1999). When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power. *Organization Science*, 10(2), 19-133. <https://doi.org/10.1287/orsc.10.2.119>
- Demerjian, P., Lev, B., & McVay, S. (2012). Quantifying managerial ability: A new measure and validation tests. *Managerial Science*, 58(7), 1229-1248. <https://doi.org/10.2139/ssrn.1266974>
- Demerjian, P., Lev, B., & McVay, S. (2013). Managerial ability and earning quality. *The Accounting Review*, 88(2), 463-498. <https://doi.org/10.2139/ssrn.1650309>
- Demerjian, P., Lewis-Western, M., & McVay, S. (2020). How does intentional earnings smoothing vary with managerial ability. *Journal of Accounting, Auditing, and Finance*, 35(2), 406–437. <https://doi.org/10.1177/0148558X17748405>
- Desai, M., & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics*, 79(1), 145–179. <https://doi.org/10.1016/j.jfineco.2005.02.002>
- Doukas, J. A., & Zhang, R. (2020). Corporate managerial ability, earnings smoothing, and acquisitions. *Journal of Corporate Finance*, 65, 101756. <https://doi.org/10.1016/j.jcorpfin.2020.101756>
- Dyreg, S., Hanlon, M., & Maydew, E. (2010). The effects of executives on corporate tax avoidance. *The Accounting Review*, 85(4), 1163-1189. <https://doi.org/10.2139/ssrn.1158060>
- Francis, B. B., Sun, X., & Wu, Q. (2013). *Managerial ability and tax avoidance*. Available at SSRN, 2348695. <https://doi.org/10.2139/ssrn.2348695>
- Francis, B. B., Sun, X., Weng, C. H., & Wu, Q. (2022). Managerial ability and tax aggressiveness. *China Accounting and Finance Review*, 24(1), 53-75. <https://doi.org/10.1108/CAFR-02-2022-0002>
- Francis, B., Hasan, I., Wu, Q., & Meng, Y. (2014). Are female CFOs less tax aggressive? Evidence from tax aggressiveness. *The Journal of the American Taxation Association*, 36(2), 171-202. <https://doi.org/10.2139/ssrn.2474543>
- Gabaix, X., & Landier, A. (2008). Why has CEO pay increased so much? *Quarterly Journal of Economics*, 123(1), 49–100. <https://doi.org/10.2139/ssrn.890829>
- Graham, J. R., Hanlon, M., Shevlin, T. J., & Shroff, N. (2014). Incentives for tax planning and avoidance: Evidence from the field. *The Accounting Review*, 89(3), 991-1023. <https://doi.org/10.2139/ssrn.2148407>

- Haider, I., Singh, H., & Sultana, N. (2021). Managerial ability and accounting conservatism. *Journal of Contemporary Accounting and Economics*, 17(1), 100242. <https://doi.org/10.1016/j.jcae.2020.100242>
- Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of management review*, 32(2), 334-343. <https://doi.org/10.5465/AMR.2007.24345254>
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, 9(2), 193-206. <https://doi.org/10.2307/258434>
- Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, 50(2-3), 127-178. <https://doi.org/10.1016/j.jacceco.2010.09.002>
- Hanlon, M., & Slemrod, J. (2009). 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/10.2139/ssrn.975252>
- Hasan, I., Hoi, S., Wu, Q., & Zhang, H. (2017). Does social capital matter in corporate decisions? Evidence from corporate tax avoidance. *Journal of Accounting Research*, 55(3), 629-668. <https://doi.org/10.1111/1475-679X.12159>
- Huang, H., Sun, L., & Zhang, J. (2017). Environmental uncertainty and tax avoidance. *Advances in Taxation* 24, 83-124. <https://doi.org/10.1108/S1058-749720170000024002>
- Huang, X. S., & Sun, L. (2017). Managerial ability and real earnings management. *Advances in accounting*, 39, 91-104. <https://doi.org/10.1016/j.adiac.2017.08.003>
- Huseynov, F., & Klamm, B. K. (2012). Tax avoidance, tax management and corporate social responsibility. *Journal of Corporate Finance*, 18(4), 804-827. <https://doi.org/10.1016/j.jcorpfin.2012.06.005>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Khan, M., Srinivasan, S., & Tan, L. (2017). Institutional ownership and corporate tax avoidance: New evidence. *Accounting Review*, 92(2), 101-122. <https://doi.org/10.2308/accr-51529>
- Koester, A., Shevlin, T., & Wangerin, D. (2017). The role of managerial ability in corporate tax avoidance. *Management Science*, 63(10), 3285-3310. <https://doi.org/10.1287/mnsc.2016.2510>
- Kor, Y. Y. (2003). Experience-based top management team competence and sustained growth. *Organization Science*, 14(6), 707-719. <https://doi.org/10.1287/orsc.14.6.707.24867>
- Lee, K., & Yoon, S. (2020). Managerial ability and tax planning: Trade-off between tax and nontax costs. *Sustainability*, 12(1), 370. <https://doi.org/10.3390/su12010370>
- Martinez, A. L. (2017). Agressividade Tributária: Um Survey da Literatura. *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, 11(0), 106-124. <https://doi.org/10.17524/repec.v11i0.1724>
- Martinez, A. L., & Ramalho, V. P. (2017). Agressividade tributária e sustentabilidade empresarial no Brasil. *Revista Catarinense da Ciência Contábil*, 16(49). <https://doi.org/10.16930/rccc.v16n49.2366>
- Martinez, A. L., Lessa, R. C., & Moraes, A. D. J. (2014). Remuneração dos auditores perante a agressividade tributária e governança corporativa no Brasil. *Revista Contabilidade e Controladoria*, 6(3), 8-18. <https://doi.org/10.5380/rcc.v6i3.34593>
- Martinez, A. L., & Martins, V. A. M. (2016). Alavancagem financeira e agressividade fiscal no Brasil. *Revista de Contabilidade da UFBA*, 10(3), 4-22. <https://doi.org/10.9771/rc-ufba.v10i3.18383>
- 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>
- Marzuki, M. M., & Al-Amin, M. S. M. (2021). The effect of audit fees, audit quality and board ownership on tax aggressiveness: evidence from Thailand. *Asian Review of Accounting*, 29(5), 617-636. <https://doi.org/10.1108/ARA-11-2020-0179>
- McGuire, S. T., Wang, D., & Ryan, J. W. (2014). Dual class ownership and tax avoidance. *The Accounting Review*, 89(4), 1478-1516. <https://doi.org/10.2139/ssrn.1761994>
- Moura, G. D., Fank, D. R. B., Mazzioni, S., Angonese, R., & Silva, G. (2019). Habilidade Gerencial E Perdas Do Valor Recuperável Do Goodwill. *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, 13(2). <https://doi.org/10.17524/repec.v13i2.2002>
- Nascimento, A. M., & Reginato, L. (2008). Divulgação da informação contábil, governança corporativa e controle organizacional: uma relação necessária. *Revista Universo Contábil*, 4(2), 25-47.
- Park, J. H. (2013). Managerial ability and SG&A cost behavior. *Seoul National University*.
- Park, J., Ko, C. Y., Jung, H., & Lee, Y. S. (2016). Managerial ability and tax avoidance: evidence from Korea. *AsiaPacific Journal of Accounting and Economics*, 23(4), 449-477. <https://doi.org/10.1080/16081625.2015.1017590>
- Ramalho, G. C., & Martinez, A. L. (2014). Empresas familiares brasileiras e a agressividade fiscal. *XIV Congresso Controladoria e Contabilidade USP*, 1-12.
- Robinson, J. R., Sikes, S. A., & Weaver, C. D. (2010). Performance measurement of corporate tax departments. *Accounting Review*, 85(3), 1035-1064. <https://doi.org/10.2308/accr.2010.85.3.1035>
- Rose, N., & Shepard, L. (1997). Firm diversification and CEO compensation: Managerial ability or executive entrenchment. *The RAND Journal of Economics*, 28(3), 489-514. <https://doi.org/10.2307/2556026>

- Santos, J. G. C. dos, Calópe, T. S., & Coelho, A. C. (2015). Teorias da firma como fundamento para formulação de teorias contábeis. *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, 9(1), 101-116. <https://doi.org/10.17524/repec.v9i1.1182>
- Saragih, A. H., Raya, M. N., & Hendrawan, A. (2021). The Moderating Role of Firm Size on the Association between Managerial Ability and Tax Avoidance. *Jurnal ASET (Akuntansi Riset)*, 13(1). <https://doi.org/10.17509/jaset.v13i1.30783>
- Simamora, A. J. (2021). Firms performance, risk taking and managerial ability. *International Journal of Productivity and Performance Management*. <https://doi.org/10.1108/IJPPM-03-2021-0172>
- Sikka, P. (2010). Smoke and mirrors: Corporate social responsibility and tax avoidance. *Accounting Forum*, 34(3-4), 153-168. <https://doi.org/10.1016/j.accfor.2012.09.002>
- Tang, T., Mo, P. L. L., & Chan, K. H. (2017). Tax collector or tax avoider? An investigation of intergovernmental agency conflicts. *Accounting Review*, 92(2), 247-270. <https://doi.org/10.2308/accr-51526>
- Wu, L., Wang, Y., Luo, W., & Gillis, P. (2012). State ownership, tax status and size effect of effective tax rate in China. *Accounting and Business Research*, 42(2), 97-114. <https://doi.org/10.1080/00014788.2012.628208>
- Zimmerman, J. L. (1983) Taxes and firm size. *Journal of Accounting and Economics*, 5(1), 119-149. [https://doi.org/10.1016/0165-4101\(83\)90008-3](https://doi.org/10.1016/0165-4101(83)90008-3)

* A preprint version of the paper was presented on the IV International Conference in Management and Accounting – ICMA, 2022

NOTES

ACKNOWLEDGMENT

Does not apply.

AUTHORSHIP CONTRIBUTION

Data collection: T. C. Graupner, A. Silva, M. Z. Silva

Data analysis: T. C. Graupner, A. Silva, M. Z. Silva

Discussion of the results: T. C. Graupner, A. Silva, M. Z. Silva

Review and approval: T. C. Graupner, A. Silva, M. Z. Silva

DATASET

The dataset that supports the results of this study is not publicly available.

FINANCING

This work was carried out with support Coordination for the Improvement of Higher Education Personnel - Brazil (CAPES) - Financing Code 001.

CONSENT TO USE IMAGE

Does not apply.

APPROVAL OF THE RESEARCH ETHICS COMMITTEE

Does not apply.

CONFLICT OF INTERESTS

Does not apply.

USE LICENSE

Copyrights for articles published in this journal are the author's, with first publication rights for the journal. Due to appearing in this Public Access Journal, the articles are free to use, with their own attributions, in educational, professional and public management applications. The journal adopted the [Creative Commons Attribution 4.0 International license - CC BY NC ND](https://creativecommons.org/licenses/by-nc-nd/4.0/). This license allows accessing, downloading, copying, printing, sharing, reusing and distributing the articles provided that the source is acknowledged, attributing the due authorship credits. In such cases, no permission is required from the authors or editors. Authors are authorized to assume additional contracts separately, for non-exclusive distribution of the version of the work published in this journal (eg, publishing in institutional repository or a book chapter).

PUBLISHER

Federal University of Santa Catarina. Accounting Sciences Course and Postgraduate Program in Accounting. Publication on the [UFSC Journal Portal](https://ufsc.br/journal-portal/). The ideas expressed in this article are the responsibility of their authors, and do not necessarily represent the opinion of the editors or the university.



EDITORS

José Alonso Borba, Denize Demarche Minatti Ferreira, Carlos Eduardo Facin Lavarda.

HISTORIC

Received on: 05/06/2023 - Peer reviewed on: 08/05/2024 - Reformulated on: 15/08/2024 - Recommended for publication on : 23/09/2024 - Published on: 07/11/2024

