

Effect of the Business Cycle on the Relationship Between Accounting Conservatism and Tax Aggressiveness

Elizangela Lourdes de Castro¹ , Patrícia Pain² , Márcia Bianchi³ , Maria Ivanice Vendruscolo⁴ 

¹Universidade Federal de Santa Catarina, Florianópolis, Santa Catarina, Brasil.

²Universidade Federal do Espírito Santo, Vitória, Espírito Santo, Brasil

^{3,4} Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brasil.



¹elizangela.castro@ufsc.br

²patricia-pain@hotmail.com

³marcia.bianchi@ufrgs.br

⁴maria.ivanice@ufrgs.br

Edited by:
José Alves Dantas

Abstract

Objective: To investigate how various cognitive and motivational biases affect decisions regarding budget expenditure and public administration. The nature of the experimental task consisted of manipulating hypothetical decision-making situations, in a realistic scenario, with the aim of verifying whether the biases: anchoring, status quo, framing and overconfidence were manifested in the managers' responses.

Method: A within-participants experiment was carried out, with data collected through a survey applied to members of the college of directors - managers, with more than five years in the role. The independent variable "knowledge" was manipulated, and "experience" measured, using concrete situations. **Results:** among the results, it is highlighted that more conservative companies are less tax aggressive during economic contraction and recession. The relationship is different between the stages of the business cycle. Analyzing the business cycle contributes to the perception that the economic situation the country is going through is relevant to managers' decisions.

Contributions: NMR at the country level allows the results to contribute to researchers minimizing potential biases from differences on economic and cultural scales. The practical contribution have focus on regulators and BEPS objectives. Since 2020, BEPS has been undergoing reformulations in order to take its practices and legislation to less developed countries that do not belong to the group. In view of the results found, it can be seen that precisely this group of countries may benefit from potentially already having less aggressive practices in more conservative companies. For the capital market participants will understanding that the economic scenario also leads to the internal manipulation of accounting information reducing asymmetry and improves the quality of the information used by them.

Keywords: Accounting conservatism; tax aggressiveness; business cycle; BEPS.

How to Cite:

Castro, E. L., Pain, P., Bianchi, M., & Vendruscolo, M. I. (2025). Effect of the Business Cycle on the Relationship Between Accounting Conservatism and Tax Aggressiveness. *Advances in Scientific and Applied Accounting*, 17(3), 180–193/194. <https://doi.org/10.14392/asaa.2024170308>

Submitted: 11 October 2023

Revisions required on: 09 November 2023

Accepted: 15 February 2024

Introduction

Contractual issues, litigation, and accounting regulation, as well as taxation, are the primary demands for the existence and use of conservatism as a characteristic of the quality of accounting information (Watts, 2003). Conditional conservatism is defined as the more timely recognition of bad news than good news regarding future cash flows (Basu, 1997; Bloom, 2018; Fatchan & Widagdo, 2021). This characteristic allows for greater efficiency in monitoring, not only of contracts but also of the decisions of company managers (Lafond & Watts, 2008; Scott, 2015), providing greater security to investors and creditors, as monitoring makes the accounting information more reliable and representative of the economic situation of the entity (Scott, 2015).

Such context demonstrates that conservatism can be complex and comprehensive, a fact reflected by research on the topic (Fatcham & Widagdo, 2021). In the studies of the relationship between conservatism and taxation, Bushman and Piotroski (2006), Finley and Stekelberg (2022), Martinez et al. (2022), Moore (2021), and Santos et al. (2016) stand out. In these studies, tax aggressiveness is identified as a means of implementing strategies to avoid or reduce tax payments, so that decisions are always aimed at reducing taxable income (Costa & Castro, 2020).

Tax burden reduction can occur through tax avoidance and/or evasion. In this regard, the Base Erosion and Profit Shifting (BEPS) initiative was created, which is a joint action by several member countries of the Organisation for Economic Co-operation and Development (OECD). BEPS aims to combat tax avoidance—where companies exploit gaps and mismatches in tax rules to artificially transfer profits to locations with low or no taxation—and thus improve the coherence of international tax rules. Therefore, studies on public policies for international collaboration to combat tax avoidance are increasingly necessary (Cooper & Nguyen, 2020).

Another aspect scarcely explored by research on the topic is the perception of differences in the relationship between conservatism and tax aggressiveness across different stages of the economic cycle, a factor of the economic environment in which companies are situated and which can influence the quality of accounting information, with managers having no control over it (Paulo & Mota, 2019). Based on the foregoing, this study poses the research problem: What is the effect of the economic cycle on the relationship between accounting conservatism and tax aggressiveness in companies from the countries that make up the BEPS steering group? Therefore, the objective is to analyze the effect of the economic cycle on the relationship between conservatism and tax aggressiveness of companies listed on the stock exchanges of the countries that make up the BEPS steering group, over the period from 2012 to 2021.

Analyzing the relationship between accounting conservatism and tax aggressiveness is necessary due to the complexity of legislation and the high tax burden (Li & Masui, 2019), which causes companies to seek ways to reduce this cost (Paulo & Mota, 2019). In light of this, conservatism can assist in such a process by influencing the final amount of taxes to be collected by companies, given that managers' choices to increase the level of conservatism of accounting information may be associated with the search for cost reduction, including tax-related costs (Basu, 1997; Martinez, 2017; Martinez et al., 2022; Watts, 2003).

Thus, this study analyzed 73,473 observations (firm/year) through descriptive statistics and multilevel regression. Consequently, it contributes to the global understanding of how accounting conservatism can influence the tax strategy of companies listed in countries that make up the BEPS steering group, and in the adjustments and discussions regarding accounting and tax legislation by various governments and regulatory bodies, adding to the research on the theme, both for academia and for the practice of professionals.

The contributions encompass the methodological approach adopted, which in the development of future research should help in reducing biases arising from different scales, cultures, and stages of development of each country, and the results contribute to the practice in the financial market. Acts of company management and the recognition that there are differences that need to be considered in their decisions with respect to the historical and economic development of each country, especially those that comprise the BEPS and adopt more stringent legislation in these aspects aiming to meet international guidelines.

2 Theoretical Framework

Accounting conservatism is considered one of the oldest and most important characteristics of accounting information, dating back to the medieval age (Basu, 1997; Zhong & Li, 2017). Formally, one of the first concepts used by professionals in the field is that of Bliss (1924) - "anticipate no profits but anticipate all losses." Since then, the discussion on the topic has evolved in terms of concepts, classification, and the cost-benefit of using this accounting principle. Research grew even further following the publication of Basu's (1997) research. Accounting conservatism is defined as a rule that leads the expectations of users of accounting information to lower averages of target achievement (Devine, 1963). Ball and Shivakumar (2005) and Beaver and Ryan (2005) argue that conservatism improves the efficiency of contracts and company investments, as there is timely recognition of

losses and restriction of managers' opportunistic behavior. For Ball et al. (2013), conditional conservatism adds new information and depends on the economic environment faced by companies, requiring that economic losses be recognized more timely than gains.

As a critique of the use of conservatism in the reporting of accounting information, Kabir and Laswad (2014) mention that it causes the book value of net assets to be underestimated in relation to their market value, while Hendriksen and Van Breda (1999) note that the uncertainty as a basis for conservatism affects the continuity of the company and raises questions about the future of its operations. However, Watts (2003) and Zhong and Li (2017) infer that there are various actors who generate demand for conservatism in financial reports, such as contracts, litigation, auditors, governments, creditors, regulators, regulation, and taxation itself.

Taxation is influenced by accounting choices, which in turn directly reflect on the outcomes of companies. This discretion can lead to opportunistic behaviors, and consequently to tax and earnings management. Tax management can be aggressive and is intended to achieve better outcomes and, primarily, to reduce, avoid, or minimize the tax burden (Bloom, 2018; Guenther et al., 2021; Watts, 2003).

The aforementioned factors demonstrate how the tax issue can affect the quality of earnings (Guenther et al., 2021) and conservatism can play an "important role" when analyzing the tax aggressiveness of companies (Sa'ad et al., 2023; Watts, 2003). In this scenario, we cannot fail to highlight the creation of BEPS by the OECD and the G20 countries, which marked a significant development in the reform of the international tax regime. The plan adopted by the countries of the BEPS steering group aims to close tax evasion loopholes and correct the corrosive impact of tax competition (Van Apeldoorn, 2018). In this sense, Joshi (2020) found that the introduction of the plan led to a significant decline in tax avoidance at the company level. However, the relevance of BEPS for the interpretation of the tax treaty depends on which interpretive community is involved (Hattingh, 2020).

Tax avoidance is a common practice for reducing taxes. In the understanding of Hanlon and Heitzman (2010), it reflects all transactions that have some effect on a company's explicit tax liability. Lietz (2013), on the other hand, defines aggressive tax planning as inherently operating at the edge of the legal and regulatory framework, carrying the risk of penalties as well as the benefits of lower taxes.

However, the study by Santos et al. (2016) pointed out that there is no linear relationship between aggressiveness and accounting conservatism. Yet, there are indications that the adopted proxy for aggressiveness generates

information regarding conservatism, a result that may indicate a higher quality of the reported information. Martinez et al. (2022) found a significant relationship between conservatism and tax aggressiveness. According to the authors, a possible explanation is that the use of more conservative accounting choices could serve as a basis for reducing the tax burden, and because of this, the degree of conservatism would be related to the level of tax aggressiveness of companies.

In a recent study, Ardillah and Halim (2022) examined the effect of institutional ownership, tax compensations, and accounting conservatism on the tax aggressiveness of companies listed on the Indonesia stock exchange, and their results showed that the metrics of aggressiveness used did not contribute to explaining the tax aggressiveness of the analyzed companies. Jebran et al. (2022) observed that the social capital of the board allows for the enhancement of corporate governance practices, and that the quality of information, accounting conservatism, and tax aggressiveness are identified as mechanisms explaining the relationship between the board's social capital and the risk of a decline in company stock prices. Meanwhile, Chen et al. (2022), in analyzing whether efforts by the tax authorities influence the risk of a drop in stock prices in Chinese companies, argued that the oversight of tax aspects on the risk of stock crashes depends on the transparency (or lack thereof) of information and ownership. The studies by Shevelin et al. (2020) and Santos et al. (2019) confirm that there is a lower quality of accounting information when companies engage in aggressive tax planning, and they tend to have lower cash flow before taxes. Thus, Hypothesis 1 of this study is that:

H1: More conservative companies are less tax aggressive.

However, factors influencing the decision-making process of companies and the quality of reported information are moments of economic changes. Periods of growth or recession can lead to greater or lesser conservatism, while they can also influence tax planning, making it more or less aggressive depending on the company's needs during that specific period, especially in environments with more complex taxation (Barrick & Brown, 2019; Jenkins et al., 2009).

Schumpeter (1939) and Burns and Mitchell (1946) observed the external scenario and the economic variations that can occur distinctly in each country - varying through proxies that use the Gross Domestic Product (GDP). These authors divided the economic cycle into four stages: expansion, recession, contraction, and recovery. The emphasis, therefore, is on growth and the dissemination of knowledge, on pioneering entrepreneurs who create new markets and successful "intrapreneurs" who rejuvenate old firms, on the creation of credit for the supply of venture capital, and on Schumpeterian

competition (Giersch, 1984).

Therefore, for Schumpeter (1939), after a revolutionary innovation (due to technical or scientific progress, for example), other related innovations are brought about by this discovery, termed an “innovation cluster.” According to the author, the occurrence of clusters determines the economic cycles. Successful innovation is typically a temporary source of market power, providing new monopolistic benefits to the innovative company. Thus, interest and profit are, in essence, the remuneration for innovations.

Industrial evolution displays a specific trajectory of industrial change that combines factors of order and continuity (such as routines, learning effects, path dependency, irreversibility, lock-in) and effects of disorder and discontinuity (radical uncertainty, mutations, paradigm shifts, the emergence of new institutions, instabilities, deviation enhancers, self-reinforcing processes) (Paulré, 2004).

From this, the literature indicates that the economic cycle can influence companies, both in terms of financial issues and accounting practices, and therefore interferes with outcomes, their management, and market perception (Duong, 2023; Oskoueï & Sureshjani, 2021). In accounting, it impacts managers' choices by providing incentives to delay or not disclose bad news, which can reflect on the confidence of creditors and shareholders, information asymmetry, earnings management, accounting conservatism, taxes, among others (Duong, 2023; Hossain et al., 2023; Kothari, 2010; Pereira & Cerqueira, 2023).

Regarding tax aggressiveness, it not only reduces the burden paid by companies but also affects their cash flow, in which the economic situation (recession/contraction or growth/recovery) is considered in the decision-making process. Moments of recession or economic growth influence the tax decisions of companies. Such decisions can have implications for government revenue, as by employing tax aggressiveness as part of their planning, companies increase their cash holdings, yet there is a reduction in fiscal revenues, especially in times of recession or contraction, where there is a greater demand for cost reduction, including taxes, and a decrease in company revenues (Chiarini et al., 2022; Hossain et al., 2023).

Research has been conducted to ascertain how the economic cycle can influence accounting factors. The studies of Pereira and Cerqueira (2023), Klein and Marquardt (2006), Chiarini et al. (2022), and Hossain et al. (2023) demonstrate that conservatism and tax aggressiveness are influenced by economic cycles, especially during periods of crisis, and that they may occur to a greater or lesser extent depending on the phase they

are in. The impacts can arise from managers' choices, in cash flow, outcomes, information asymmetry, and others. The studies by Paulo and Mota (2019) and Duong (2023) show that earnings management strategies, which look into the manipulation of accounting data with distinct objectives related to company expectations, are impacted by the global economic environment, a result of the constant process of innovation and industrial reinvention. Thus, the opportunistic behavior of managers varies between the stages of the economic cycle in which the country is. Notably, they manipulate outcomes to decrease them during recession and contraction phases. Therefore, Hypothesis 2 of this study is that:

H2: The relationship between accounting conservatism and tax aggressiveness is distinct in significance and intensity among the stages of the economic cycle.

3 Methodological Procedures

The data for the variables were collected from the Refinitiv Eikon database for the period from 2010 to 2021. To perform the calculations related to the lags necessary for the models and metrics of the model (Equation 1), the analysis was conducted for the years 2012 to 2021. The sample, due to the absence of data that would allow for the calculation of control variables, was composed of companies from 21 countries (out of the 24 that make up the BEPS steering group), totaling 138,446 observations (firm/year). The countries analyzed in this study were: South Africa; Argentina; Australia; Austria; Brazil; Canada; China; Colombia; South Korea; the United States; France; India; Ireland; Italy; Jamaica; Japan; Nigeria; Poland; Russia; Singapore; and the United Kingdom. In analyzing the models, different quantities of observations were noted among companies, due to the absence of data for calculating dependent and explanatory variables, therefore an unbalanced panel was used. For the purpose of the study, it was decided to use the earnings conservatism model of Ball and Shivakumar (2005), called BS, as it is one of the most applied in studies of conditional conservatism (Zhong & Li, 2017), and a model that allows for analysis from the profit perspective (using profit variations as proxies). This study also included analysis from the perspective of cash flow conservatism, derived from the same study by Ball and Shivakumar (2005), called FCO. For the latter, the premise outlined by the authors is that economic gains tend to be recognized when they are realized, and thus are accounted for on a cash basis, thereby expecting a reduction in cash flow noise while recognizing unrealized asymmetric gains and losses. The perception of cash flow in the context of tax aggressiveness is relevant, as it leads to its increase, and this can lead to information asymmetry between managers and owners (Wang et al., 2020). The use of different models allowed for the analysis of the effect of conservatism on tax aggressiveness from both an

accounting and cash flow perspective.

Based on the proxies used for measuring conservatism and the main metrics for

calculating tax aggressiveness pointed out by the literature (Lietz, 2013; Martinez, 2017), Table 1 presents the dependent and explanatory variables.

Table 1

Description of the variables of interest used in the study

Variable	Calculation	Theoretical Basis	Interpretation	Expected Signal
Tax Aggressiveness Metrics - Dependent Variable				
ETR	Prov.IR and CSLL / LAIR ex-pense.	Lietz (2013); Martinez (2017)	The higher the rate, the less tax aggressive the company is.	N.A.
CashETR	Taxes paid (Income Tax and Social Contribution) by compa-ny i in year t divided by profit before taxes.	Gao (2022); Lietz (2013)		N.A.
ETRLRun	(Prov.IR and CSLL expense + Prov. IR and CSLL _{t-1} expense + Prov. IR and CSLL _{t-2} expense) / (LAIR + LAIR _{t-1} + LAIR _{t-2}).	Lietz (2013); Martinez et al. (2022)		N.A.
Conservatism Metrics - Explanatory Variable				
Earnings Model (BS)				
DVLLi,t-1	Dummy variable indicating whether there is a negative variation in the net profit of company i from year t-1 to t, with a value of 1 if < 0, and 0 in other cases.	Ball and Shiva-kumar (2005)	Not specified.	+
VLLi,t-1	Variation in the net profit from year t-2 to year t-1 of company i divided by the Total Assets.	Ball and Shiva-kumar (2005)	A coefficient equal to zero indicates that gains are recognized as persis-tent positive components of the accounting result.	+/-
DVLLi,t-1 * VLLi,t-1	Interaction between variation dummy (DVLL) and the variation of net surplus (VLL) of company i from year t-2 to t-1.	Ball and Shiva-kumar (2005)	A coefficient less than zero implies the timely recognition of losses more than gains.	-
Cash Flow Model (FCO)				
DCFO	Dummy variable being 1 if CFO is negative, and 0 for others.	Ball and Shiva-kumar (2005)	Not specified.	+
CFO	Cash flow from operations be-fore extraordinary and excep-tional items minus Accruals, deflated by the Total Assets at the beginning of the period.	Ball and Shiva-kumar (2005)	A negative coeffi-cient is expected.	-
DCFO*CFO	Interaction between the Opera-tional Cash Flow dummy and Operational Cash Flow.	Ball and Shiva-kumar (2005)	An incremental and positive coefficient is expected.	+

Note. **N.A.**: Not Applicable; **IR**: Income Tax; **CSLL**: Social Contribution on Net Profit; **LAIR**: Profit Before Taxes.

According to previous studies, the control variables used, which can help describe the possible effects of conservatism on tax aggressiveness, are presented in Table 2.

Table 2

Control Variables Adopted According to Previous Literature

Variable	Description	Calculation	Theoretical Basis	Expected Signal
SIZE	Size	Natural logarithm of the Market Value.	Chiachio and Martinez (2019); Khan and Watts (2009)	+
MTB	Market-to-book	Market Value divided by Equity.	Chiachio and Martinez (2019); Khan and Watts (2009)	-
LEV	Leverage	Short-term debt plus long-term debt, scaled by market value.	Chiachio and Martinez (2019); Khan and Watts (2009)	-
PPE	Fixed Assets	Fixed assets divided by Market Value.	Chiachio and Martinez (2019); Garcia Lara et al. (2020)	-
Big4	Auditing	Dummy variable, being 1 if company <i>i</i> in year <i>t</i> is audited by a big four firm and 0 for others.	Garcia Lara et al. (2020)	+
Age	Company age	calculated from the date of foundation until the year 2021. The	Green and Kerr (2022)	+
Sector	NAICS Sectors	company's sector designated by NAICS.	Garcia Lara et al. (2020)	+/-
COV	COVID Period	Dummy variable with a value of 1 for the years of the Covid-19 pandemic and 0 for others.	Raphael and Jack (2020); Souza and Costa (2022)	-
CE	Economic Cycle	Identified as expansion, recession, contraction, and recovery.	Schumpeter (1939)	N.A.

Note. **N.A.**: Not Applicable. **NAICS**: North American Industry Classification System.

For the data analysis, the Hierarchical Linear Model for Panel Data (or Multilevel Regression) (HLM) in three levels was used, as it is considered a more advanced model for panel data, in addition to being applicable in situations where the sample presents subgroups and observations over time from different units (Fávero &

Belfiore, 2021). HLM stands out when the assumption of sphericity is not met, when data are missing, or when the data are unbalanced, situations encountered in terms of firm performance, or in the case of this study, in the relationship between taxation and accounting conservatism with a sample that includes countries economically structured in different ways (Goldszmidt et al., 2007). Fávero and Confortini (2010) add that this type of model proposes an analysis structure in which the different levels at which the data are articulated can be recognized, with each sublevel represented by its own model, and that for the analysis of more than one sector, it is not necessary to estimate a regression equation for each sector or another analysis unit being proposed, such as the country.

Based on this, this study aimed to use the three-level hierarchical model, with the objective of verifying the influence on the companies in the sample and on the sector grouping, as there is evidence in the literature that there are sectors with a greater or lesser tendency to use tax aggressiveness, as well as countries that have their own characteristics that can influence the tax decision of companies (Lismiyati & Herliansya, 2021; Santos et al., 2016). Therefore, Equations 1, 2, and 3 refer to the Null Model and aim to analyze the variance of the variable representing tax aggressiveness (TaxAg) and how much can be explained by the differences between companies, and among companies within the same sector and country.

$$\text{Level 1 (Company)} \quad \gamma_{ijk} = \beta_{0j} + e_{ijk} \quad (1)$$

$$\text{Level 2 (Sector)} \quad \beta_{0jk} = \gamma_{00k} + u_{0j} \quad (2)$$

$$\text{Level 3 (Country)} \quad \gamma_{0jk} = \delta_{000} + v_{00j} \quad (3)$$

Where: γ_{ijk} represents the tax aggressiveness of company *i* from sector *j* of country *k*; β_{0j} expected tax aggressiveness (average) of sector *j*; γ_{0jk} expected tax aggressiveness (average) of country *k*; e_{ijk} , u_{0j} , and v_{00j} are the random terms for company, sector, and country, respectively.

Based on the definition of the levels and the variables previously described, the final model proposed based on the structure of hierarchical models is described in Equation 4.

$$\text{TaxAg}_{ijk} = \beta_{0ijk} + \beta_1 \text{CCO}_{ijk} + \beta_2 \sum_{i=1}^8 \text{Controls}_{ijk} + u_{0jk} + v_{00jk} + e_{ijk} \quad (4)$$

Where: TaxAg represents the tax aggressiveness metrics: ETR; CashETR; and ETRLRun. CCO represents the conservatism metrics. Controls is the sum of control variables distributed among the hierarchical levels, with the variable related to sector (Sector) pertaining to level 2, economic cycle (CE) to the country level (level 3), and the others,

as they vary over time and for each company, to the company level (level 1).

After the data collection and structuring of variables, outliers were treated by winsorization between 2% and 98%. The financial sector was excluded, as it has very distinct characteristics and legislation.

The next step was the analysis of the regression assumptions. For multicollinearity, the VIF test was used, which had average final values of 3.43 for the BS model, 3.83 for the CFO model. Normality was tested with the Shapiro-Wilk test. To test for heteroscedasticity, the White test was used, with the result of 0.0000 (indicative of heteroscedasticity), and for autocorrelation, the Wooldridge test was utilized. However, as per Nunes (2010), HLM models, by combining fixed effects with nested random effects, allow for the analysis of data with complex structures in the presence of autocorrelation and heteroscedasticity.

4 Analysis And Discussion Of Results

4.1 Descriptive Statistics of Variables

The descriptive statistics presented in Table 3 refer to the data before the treatments outlined in the methodology section. In the following tables, which include the other tests, data after outlier treatment were adopted. The high variability, due to characteristics of each country, ceased to be a potential detriment to the results, as the country level was analyzed in the regression tests. It is observed that the standard deviation is greater than both the mean and median for the main variables of interest, which can be explained not only by the fact that the panel is unbalanced but primarily by the differences in the characteristics of the companies, the sectors in which they operate, and their countries, with the 21 countries having different sizes and economic contexts.

Table 3
Descriptive Statistics of the Variables Used

Variable	N	Mean	Standard Devia-tion	Minimum	Median	Maximum
			Full Sample			
ETR	89117	0.136	5.279	-515.75	0.068	645.91
CashETR	107500	-0.226	24.109	-6205.36	0.000	1225.08
ETRLRun	80162	0.565	71.397	-4099.44	0.263	17320.77
SIZE	115880	19.072	2.500	1.62	19.394	47.78
MTB	115843	124000000000	4210000000000	-14300000000000	1.867	258873.50
LEV	115783	224.192	51588.960	-1.36	0.420	16900000
PPE	91923	9.942	559.910	-0.04	0.277	87318.12
VLLt1	121407	23.500	3763.646	-59237.34	-0.003	1050174
DVLLt1_VLLt1	121407	-4.941	366.001	-59237.34	-0.003	0.00
CFO	128904	-10.212	1262.241	-283137.60	0.046	23352.44
DCFO_CFO	128904	-10.559	1260.520	-283137.60	0.000	0.00

Note. *The descriptive statistics presented refer to data before the treatments outlined in the methodology section. **ETR**: Effective Tax Rate; **CashETR**: Cash Effective Tax Rate; **ETRLRun**: Long Run Effective Tax Rate; **SIZE**: Company Size; **MTB**: Market-to-Book; **LEV**: Leverage; **PPE**: Property, Plant, and Equipment; **VLLt1**: Variation in net profit from year t-2 to year t-1 of company i divided by Total Assets; **DVLLt1_VLLt1**: Interaction between the variation dummy (DVLL) and the net surplus variation (VLL) of company i from year t-2 to t-1; **CFO**: Cash Flow from Operations before extraordinary and exceptional items minus Accruals, deflated by Total Assets at the beginning of the period; **DCFO_CFO**: Interaction between the Operational Cash Flow dummy and Operational Cash Flow.

ETR has an average of 13.6%, CashETR of -22.6%, and ETRLRun of 56.5%, indicating that, on average, companies tend to not be tax aggressive, despite the value of long-term taxation, a factor ratified by the value found in the medians, where CashETR is negative around 0.000, a similar behavior is found when observing the trend values in each economic cycle. One of the variables that appears more symmetrical is related to the average size of the companies comprising the sample, indicating little variability and dispersion around the mean, even considering companies from different sectors and countries.

Regarding auditing, 32.42% of the observations pertain to companies audited by a "Big Four" firm. The sectors with the greatest representation are Manufacturing with 47.94% and Professional, Scientific, and Technical with 10.41%, with 13.54% of the observations belonging to regulated sectors. The predominant economic cycle during the analyzed period is expansion (42.11% of the

sample), indicating that for most countries, the phase of greatest economic growth prevailed, which can be a motivating factor for company growth.

The correlation analysis indicated that the economic cycle has a positive and significant relationship at 1% with the metrics of tax aggressiveness and a negative relationship with the variables of interest for conservatism (DVLL*VLL and DCFO*CFO), signaling that changes in the economic cycle generate a contrary variation in conservatism (Pereira & Cerqueira, 2023). The variables of company age (Age) and Big4 have a significant (1%) and positive relationship with the metrics of tax aggressiveness and a negative relationship with conservatism. It is noteworthy that the correlation between Big4 variables and CashETR is 37.14%, highlighting a strong influence of audits concerning issues involving companies' cash flow. The correlation analysis indicates that the economic cycle has a positive and significant relationship at 1% with

all metrics of tax aggressiveness and negative with $DVLL \cdot VLL$ and $DCFO \cdot CFO$, signaling that changes in the economic cycle generate a contrary variation in conservatism.

4.2 Multilevel Regression Results for the Study Models

Regarding the results of the regression models, the null model for tax aggressiveness metrics was first analyzed, so called because it does not include explanatory variables. The results indicate that the multilevel regression model is appropriate, as the likelihood ratio test (lrtest) with a result of $\chi^2 = 0.000$ rejects the null hypothesis that the random intercepts are equal, discarding estimation by the traditional regression model (Fávero & Belfiore, 2021).

The tests allowed the inference that there is significant variability (significances of 0.01 and 0.05) in tax aggressiveness among companies, which may indicate

variations from the different sectors and or countries in which the companies operate, as there may be different incentives for greater or lesser use of tax aggressiveness (Li & Masui, 2019). The results of the proposed general model (Equation 4) are presented in Table 4. Regarding the conservatism models, the main explanatory variables ($DVLL \cdot VLL$ and $DCFO \cdot CFO$) are statistically significant at 1% and 10%, respectively.

However, in the "BS Model," the prediction indicating conservatism, the sum of the variation in net profit ($VLLitk$) and the interaction between the profit variation dummy and the profit variation in t-1 ($DVLLit1 \cdot VLLit1$), should be less than zero. In the "FCO Model," the coefficient of $DCFO \cdot CFO$ (interaction between the Operational Cash Flow dummy and Operational Cash Flow) should be positive, factors not found in the results of this analysis, as the signs found are opposite; therefore, there are no indications of conservatism in the general model (Table 4).

Table 4
Regression Analysis – General Model – ETR, CashETR, ETRLRun

Model Variables	ETR		CashETR		ETRLRun	
	BS Model	FCO Model	BS Model	FCO Model	BS Model	FCO Model
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
$DVLLit1$	-0,007***		0,052***		-0,002	
$VLLit1$	-0,082***		-0,011		-0,361***	
$DVLLit1 \cdot VLLit1$	0,113***		0,043		0,580***	
DCFO		-0,024***		0,010		-0,035***
CFO		0,047***		0,226***		0,170***
$DCFO \cdot CFO$		-0,034*		-0,201***		-0,143***
SIZE	0,007***	0,006***	0,013***	0,012***	0,021***	0,021***
MTB	-0,001***	-0,001***	0,002***	0,002***	-0,004***	-0,005***
LEV	0,004***	0,004***	-0,006***	-0,006***	0,001	0,002
PPE	-0,007***	-0,007***	-0,006***	-0,006**	-0,012***	-0,012***
COV	-0,009*	-0,008	0,127***	0,122***	-0,067***	-0,071***
Age	0,000***	0,000***	0,001***	0,001***	0,001***	0,001***
Big4	0,001***	0,00	0,006	0,004	0,000	0,002
CE 2	0,017***	0,016***	-0,025**	-0,025**	-0,003	-0,002
CE 3	0,010***	0,010***	-0,004	-0,005	0,011	0,010
CE 4	0,019***	0,016***	0,071***	0,071	-0,004	-0,007
Constant	-0,035	-0,020	-0,243***	-0,226***	-0,090*	-0,131**
Observations	61071	61614	72650	73473	56683	56959

Note. *** $p < 0,01$, ** $p < 0,05$, * $p < 0,1$. ETR: Effective Tax Rate; CashETR: Cash Effective Tax Rate; ETRLRun: Long Run Effective Tax Rate; SIZE: Company Size; MTB: Market-to-Book; LEV: Leverage; PPE: Property, Plant, and Equipment; $VLLit1$: Variation in net profit from year t-2 to year t-1 of company i divided by Total Assets; $DVLLit1 \cdot VLLit1$: Interaction between the variation dummy (DVLL) and the net surplus variation (VLL) of company i from year t-2 to t-1; CFO: Cash Flow from Operations before extraordinary and exceptional items minus Accruals, deflated by Total Assets at the beginning of the period; $DCFO \cdot CFO$: Interaction between the Operational Cash Flow dummy and Operational Cash Flow.

Regarding the control variables, a noteworthy point is that the Big4 variable, which represents a higher quality of auditing service due to better technological and human resources, would reduce tax aggressiveness (Hartmann & Martinez, 2020), was not statistically significant in any of the models tested. In contrast, the age of companies (time in years since the founding date) is significant, indicating that older firms, thus more established in the market, tend to be less tax aggressive, regardless of the perspective observed. SIZE, as expected, is significant and positive, indicating that larger companies tend to engage in more aggressive tax planning, a result consistent with the study by França and Bezerra (2022) and Lanis & Richardson (2015), as they have the financial, technological, and personnel resources for better analysis and planning. As for sectors, they were predominantly not statistically significant, both in regulated and unregulated sectors. Notable is the Administrative and Support and Waste sector, which was significant at 5% and with a positive coefficient in both models for ETRLRun. Regarding the control for the years, these have different behaviors in all models analyzed.

Regarding economic cycles, the results of the general model indicate that for ETR and CashETR, only the recession stage is not significant; the others are significant at 1% or 5%, which allows inferring that in moments when the country's economy is in recovery, expansion, or contraction, there is an influence of the current cycle on the tax aggressiveness of companies

both from the perspective of tax expense and the cash outlay for the effective tax payment. For ETRLRun, there were no indications of the influence of economic cycles. To more effectively analyze the influence of the economic cycle, HLM regressions were run for each of the stages of the economic cycle - contraction (EC 1), expansion (EC 2), recession (EC 3), and recovery (EC 4). The results that examine the effect of economic cycles of contraction and recession on the relationship of conservatism with tax aggressiveness metrics – ETR, CashETR, and ETRLRun - using BS and FCO Models are presented in Tables 5 and 6. These highlight a significant variability in the behavior of variables among the economic cycles.

For the economic cycle stages related to periods of economic downturn, namely, contraction and recession, there is a slight indication of conservatism only in relation to the "FCO Model" for CashETR during the recession period, as it is significant at 10% and has a positive coefficient. This may be an initial indicator that in years when companies have negative cash flows, these will be compensated by accruals, tending to decrease the tax aggressiveness of companies (Ball & Shivakumar, 2005). Thus, companies that are more conservative from the cash flow perspective are less tax aggressive, and this behavior depends on the economic scenario in which the company is situated, leading to the non-rejection of both hypotheses (H1 and H2) of this study.

Table 5
Regression Analysis – ETR, CashETR, ETRLRun – Contraction and Recession Stages

Panel A - Contraction						
Model Variables	ETR		CashETR		ETRLRun	
	BS Model	FCO Model	BS Model	FCO Model	BS Model	FCO Model
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
DVLLt1	-0,022***		0,065***		-0,008	
VLLt1	-0,094***		-0,012		-0,656***	
DVLLt1_VLLt1	0,123***		-0,020		0,874***	
DCFO		-0,005		0,064***		-0,024**
CFO		-0,012		0,272***		0,174***
DCFO_CFO		-0,006		-0,186*		-0,288***
Constant	-0,064	-0,065	-0,025	-0,106	-0,212**	-0,298***
Observations	18528	18562	18717	18781	18184	18202
Panel B - Recession						
Model Variables	ETR		CashETR		ETRLRun	
	BS Model	FCO Model	BS Model	FCO Model	BS Model	FCO Model
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
DVLLt1	-0,017***		0,063***		-0,019**	
VLLt1	-0,068**		0,005		-0,458***	
DVLLt1_VLLt1	0,100***		-0,022		0,643***	
DCFO		-0,017***		0,119***		-0,006
CFO		-0,094***		0,470***		0,098
DCFO_CFO		0,081*		-0,409***		-0,154*
Constant	0,097	0,097	0,108	0,029	-0,051	-0,112
Observations	13328	13354	13426	13449	13102	13114

Note. *** p<0,01, ** p<0,05, * p<0,1.

However, when observing the variable of profit variation in $t-1$ - $VLLt-1$, - from the "BS Model", it is not statistically significant only for CashETR, but is statistically significant and different from zero, at 1% for ETR in contraction, ETRLRun for recession and contraction, and at 5% ETR in a period of recession. This implies that for

companies in periods of economic downturn, the persistence of the level of results (profits or losses) is congruent with the deferred recognition of economic gains as recurring elements over time in the accounting result, and which may undergo reversals in future periods (Ball & Shivakumar, 2005).

Table 6

Regression Analysis – ETR, CashETR, ETRLRun – Expansion and Recovery Stages

Panel A - Expansion						
Model Variables	ETR		CashETR		ETRLRun	
	BS Model	FCO Model	BS Model	FCO Model	BS Model	FCO Model
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
DVLLt1	0,009**		0,035***		0,001	
VLLt1	-0,082***		-0,040***		-0,258***	
DVLLt1_VLLt1	0,119***		0,117***		0,448***	
DCFO		-0,047***		-0,058***		-0,087***
CFO		0,124***		0,134***		0,216***
DCFO_CFO		-0,109***		-0,137***		-0,156**
Constant	-0,037	0,014	-0,201***	-0,131***	-0,112	-0,062
Observations	19557	19854	27232	27665	16950	17106
Panel B - Recovery						
Model Variables	ETR		CashETR		ETRLRun	
	BS Model	FCO Model	BS Model	FCO Model	BS Model	FCO Model
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
DVLLt1	0,001		0,041***		0,024**	
VLLt1	-0,077***		-0,063***		-0,400***	
DVLLt1_VLLt1	0,133***		0,166***		0,850***	
DCFO		-0,052***		-0,103***		-0,080***
CFO		0,068*		0,120**		0,133
DCFO_CFO		-0,048		-0,112**		-0,075
Constant	0,004	0,036	-0,209***	-0,093	0,117	0,064
Observations	9658	9844	13275	13578	8447	8537

Note. *** $p < 0,01$, ** $p < 0,05$, * $p < 0,1$.

From the perspective of economic growth periods, the stages of expansion and recovery, in both models, it is not possible to identify indications of conservatism, as the expected signs were not confirmed in any of the tests. When putting the variable $VLLt-1$ into perspective, its result is different from zero, which implies that the recognized economic gains are not "persistent" (Ball & Shivakumar, 2005), but being less than zero indicates that there is timely recognition of economic gains, denoting they are recognized as "transitory" increases in revenue components that tend to reverse (Ball & Shivakumar, 2005).

Upon examining the results of the relationship between conservatism and tax aggressiveness, these are aligned with the studies of Ardillah and Halim (2022), Martinez et al. (2022), Hidayanto et al. (2021), and Pereira and Cerqueira (2023), but diverge from Jebran et al. (2022) and Santos et al. (2016). It is observed that, from the profit perspective (BS), there is no influence of conservatism on tax aggressiveness, but rather the timely recognition of gains, in a transitory manner, which tend to reverse (Ball & Shivakumar, 2005; Basu,

1997). This may indicate that the potential gains from tax aggressiveness will be transitory and are likely to be reversed in subsequent periods.

In the "FCO Model," in addition to demonstrating indications of conservatism, we find that the cash flow of companies is compensated by accruals in periods when they are positive, especially in relation to periods of economic crisis, potentially reaching up to 47% (Ball & Shivakumar, 2005). According to the discretion that may arise from tax factors, such as incentives, country legislation, and the link between accounting and tax reporting, will influence both conservatism and the quality of information.

In conclusion, the results indicate that there are still conflicting issues in the literature regarding the theme, highlighting the need for further studies. It can be observed that macroeconomic factors, such as the economic cycle and the country of operation (Chiarini et al., 2022; Hossein et al., 2023; Oskouei & Sureshjani, 2021), influence companies' choices in conducting more or less aggressive tax planning,

which consequently affects the quality of the reported information.

5 Final Considerations

Among the main results, concerning the relationship between dependent and explanatory variables, the significant variability in the behavior of variables across the stages of the economic cycle stands out. For periods of downturn in local economies (contraction and recession), indications of conservatism were found in the "FCO Model" for the dependent variable CashETR. The positive coefficient allowed the inference that in years when companies have negative cash flows, these are compensated by accruals and tend to decrease tax aggressiveness.

Regarding the hypotheses tested, Hypothesis 1, that more conservative companies are less tax aggressive, could only be confirmed in the tests for the model at each stage of the economic cycle, which also led to the confirmation of Hypothesis 2. Therefore, the relationship between accounting conservatism and tax aggressiveness is distinct in significance and intensity among the stages of the economic cycle. In this sense, the analysis of the model through HLM for each of the economic scenarios considered by Schumpeter (1939) contributed to finding results and inferring aspects that would not be possible with traditional analysis.

The applied method (HLM) allowed for "neutralizing" the bias from different treatments given by local Governments in terms of taxation and sectoral regulation. Beyond this, analyzing from the dimension of the economic cycle contributes to the perception that the economic situation a country is experiencing is relevant to managers' decisions in managing their resources and relationships with stakeholders. Thus, it contributes to the global understanding of how accounting conservatism can influence the tax strategy of companies listed in countries that comprise the BEPS steering group, and in the adjustments and discussions regarding accounting and tax legislation by various governments and regulatory bodies, adding to the research on the theme, both for academia and for the practice of market professionals.

The contributions cover the methodological approach adopted, which in the development of future research should help in reducing biases stemming from different scales, cultures, and stages of development of each country. Therefore, HLM is a method that contributes to ensuring that new cross-country research does not incur problems such as those mentioned, which were efficiently circumvented in this study with proven efficiency in statistical pre-tests. The results contribute to the market's understanding of company

management actions and that there are differences that need to be considered in their decisions with respect to the historical and economic development of each country.

In light of this, it is suggested that in future studies, countries be analyzed individually, in the same way as the stages of the economic cycle were observed in this study, as a means of observing the relationship between conservatism and aggressiveness in regional contexts. The adoption of the countries that make up the BEPS steering group was justified by their relevance when discussing the taxation of listed companies, a variable explained in this study. However, future research could explore and compare the particularities of each global region, whether by comparing them with each other or by analyzing them individually.

References

- Ardillah, K., & Halim, Y. (2022). The Effect of Institutional Ownership, Fiscal Loss Compensation, and Accounting Conservatism on Tax Avoidance. *Journal of Accounting Auditing and Business*, 5(1), 1-15. <https://doi.org/10.24198/jaab.v5i1.37310>
- Ball, R., & Shivakumar, L. (2005). Earnings Quality in UK Private Firms: Comparative Loss Recognition Timeliness. *Journal of Accounting and Economics*, 39(1), 83-128. <https://doi.org/10.1016/j.jacceco.2004.04.001>
- Ball, R., Kothari, S. P., & Nikolaev, V. V. (2013). Econometrics of the Basu asymmetric timeliness coefficient and accounting conservatism. *Journal of Accounting Research*, 51(5), 1071-1097. <https://doi.org/10.1111/1475-679X.12026>
- Barrick, J. A. & Brown, J. L. (2019). Tax-Related Corporate Political Activity Research: A Literature Review. *Journal of the American Taxation Association*, 41 (1), 59-89. <https://doi.org/10.2308/atax-52026>
- Basu, S. (1997). The Conservatism Principle and the Asymmetric Timeliness of Earnings, *Journal of Accounting and Economics*, 24 (1), 3-37. [https://doi.org/10.1016/S0165-4101\(97\)00014-1](https://doi.org/10.1016/S0165-4101(97)00014-1)
- Beaver, W. H., & Ryan, S. G. (2005). Conditional and unconditional conservatism: Concepts and modeling. *Review of accounting studies*, 10(2), 269-309. <https://doi.org/10.1007/s11142-005-1532-6>
- Bliss, J. H. (1924). *Management Through Accounts*. The Ronald Press Co, New York. <http://babel.hathitrust.org/cgi/pt?id=wu.89097131643;view=1up;seq=126>

- Bloom, R. (2018). Conservatism in Accounting: A Reassessment. *The Accounting Historians Journal*, 45(2), 1–15. <http://www.jstor.org/stable/45409069>
- Burns, A. F., & Mitchell, W. C. (1946). Measuring business cycles. National bureau of economic research.
- Bushman, R. M., & Piotroski, J. D. (2006). Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of accounting and economics*, 42(1-2), 107-148. <https://doi.org/10.1016/j.jacceco.2005.10.005>
- Chen, S., Ye, Y., & Jebran, K. (2022) Tax enforcement efforts and stock price crash risk: Evidence from China. *Journal of International Financial Management & Accounting*, 33(2), 193-218. <https://doi.org/10.1111/jifm.12145>
- Chiachio, V. F. D. O., & Martinez, A. L. (2019). Efeitos do Modelo de Fleuriet e Índices de Liquidez na Agressividade Tributária. *Revista de Administração Contemporânea*, 23, 160-181. <https://doi.org/10.1590/1982-7849rac2019180234>
- Chiarini, B., Ferrara, M., & Marzano, E. (2022). Tax evasion and financial accelerator: A corporate sector analysis for the US business cycle. *Economic Modelling*, 108, 105780. <https://doi.org/10.1016/j.econmod.2022.105780>
- Cooper, M., & Nguyen, Q. T. K. (2020). Multinational enterprises and corporate tax planning: a review of literature and suggestions for a future research agenda. *International Business Review*, 29(3), 101692. <https://doi.org/10.1016/j.ibusrev.2020.101692>
- Costa, L. G. B., & Castro, E. L. (2020). Agressividade Tributária e Remuneração dos Acionistas no Setor de Utilidade Pública. In: XX USP International Conference in Accounting. Anais.
- Devine, C. T. (1963). The Rule of Conservatism Reexamined. *Journal of Accounting Research*, 1(2), 127–138. <https://doi.org/10.2307/2489851>
- Duong, H. K. (2023). Gerenciamento de ganhos reais durante crises econômicas. *Journal of International Accounting Research*, 22(3), 97–128. <https://doi.org/10.2308/JIAR-2021-093>
- Fatchan, F. H., & Widagdo, A. K. (2021). Perplexity in Accounting Conservatism: a Critical Review. *Riset Akuntansi dan Keuangan Indonesia*, 6(1), 42-53. <http://10.23917/reaksi.v6i1.13824>
- Fávero, L. P. L., & Confortini, D. (2010). Modelos multinível de coeficientes aleatórios e os efeitos firma, setor e tempo no mercado acionário Brasileiro. *Pesquisa Operacional*, 30(3), 703-727. <https://doi.org/10.1590/S0101-74382010000300011>
- Fávero, L. P., & Belfiore, P. (2021). Manual de análise de dados: estatística e modelagem multivariada com Excel®, SPSS® e Stata®. Gen LTC
- Finley, A. R., & Stekelberg, J. (2022). Measuring Tax Authority Monitoring. *Journal of the American Taxation Association*, 44(1), 75–92. <https://doi.org/10.2308/JATA-2020-026>
- França, T. S., & Bezerra, F. A. (2022). Agressividade tributária nas empresas de capital aberto que atuam em mercado regulado. *Revista Ambiente Contábil*, 14(1), 110-130. <https://doi.org/10.21680/2176-9036.2022v14n1ID23934>
- Gao, L. (2022). Accountant CFOs and corporate tax avoidance. *Journal of Corporate Accounting & Finance*, 33, 164– 184. <https://doi.org/10.1002/jcaf.22527>
- Garcia Lara, J. M., Osma, B. G., & Penalva, F. (2020). Conditional conservatism and the limits to earnings management. *Journal of Accounting and Public Policy*, 39(4), 106738. <https://doi.org/10.1016/j.jaccpubpol.2020.106738>
- Giersch, H. (1984). The Age of Schumpeter. *The American Economic Review*, 74(2), 103–109. <https://www.jstor.org/stable/1816338>
- Goldszmidt, R. G. B, Brito, L. A. L., & Vasconcelos, F. C. (2007). O efeito país sobre o desempenho da firma: uma abordagem multinível. *Revista de Administração de Empresas*, 47, 1-14. <https://doi.org/10.1590/S0034-75902007000400003>
- Green, D. H., & Kerr, J. N. (2022). How Do Firms Use Cash Tax Savings? A Cross-Country Analysis. *Journal of the American Taxation Association*, 44(1), 93-121. <https://doi.org/10.2308/JATA-19-027>
- Guenther, D. A., Krull, L. K., & Williams, B. M. (2021). Identificando Diferentes Tipos de Evasão Fiscal: Implicações para a Pesquisa Empírica. *Journal of the American Taxation Association*, 43 (1), 27–50. <https://doi.org/10.2308/jata-17-044>
- 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>

Hartmann, C. F., & Martinez, A. L. (2020). Agressividade fiscal e as empresas de auditoria Big4. *Revista de Administração, Ciências Contábeis e Sustentabilidade*, 10(2), 37-46. <https://doi.org/10.18696/reunir.v10i3.843>

Hattingh, J. (2020). The Relevance of BEPS Materials for Tax Treaty Interpretation. *Bulletin for International Taxation*, 74, 179-196. SSRN: <https://ssrn.com/abstract=3683850>

Hendriksen, E. S., & Breda, M.F. V. (1999). *Teoria da Contabilidade*. Grupo GEN.

Hossain, M., Lobo, G. J., & Mitra, S. (2023). Risco político ao nível da empresa e elisão fiscal corporativa. *Rev Quant Finan Acc*, 60, 295-327. <https://doi.org/10.1007/s11156-022-01095-3>

Jebran, K., Chen, S., & Zhang, R. (2022). Board social capital and stock price crash risk. *Review of Quantitative Finance and Accounting*, 58(2), 499-540. <https://doi.org/10.1007/s11156-021-01001-3>

Jenkins, D.S., Kane, G.D. & Velury, U. (2009), Earnings Conservatism and Value Relevance Across the Business Cycle. *Journal of Business Finance & Accounting*, 36, 1041-1058. <https://doi.org/10.1111/j.1468-5957.2009.02164.x>

Joshi, P. (2020). Does private country-by-country reporting deter tax avoidance and income shifting? Evidence from BEPS Action Item 13. *Journal of Accounting Research*, 58(2), 333-381. <https://doi.org/10.1111/1475-679X.12304>

Kabir, M. H., & Laswad, F. (2014). The behaviour of earnings, accruals and impairment losses of failed New Zealand finance companies. *Australian Accounting Review*, 24(3), 262-275. <https://doi.org/10.1111/auar.12028>

Khan, M., & Watts, R. L. (2009). Estimation and empirical properties of a firm-year measure of accounting conservatism. *Journal of Accounting and Economics*, 48(2-3), 132-150. <https://doi.org/10.1016/j.jacceco.2009.08.002>

Klein, A., & Marquardt, C. A. (2006). Fundamentals of accounting losses. *The Accounting Review*, 81(1), 179-206. <https://doi.org/10.2308/accr.2006.81.1.179>

Kothari, S., Ramanna, K., & Skinner, D. (2010). Implications for GAAP from an analysis of positive

research in accounting. *Journal of Accounting and Economics*, 50(2-3), 246-286. <https://doi.org/10.1016/j.jacceco.2010.09.003>

LaFond, R., & Watts, R. L. (2008). The Information Role of Conservatism. *The Accounting Review*, 83(2), 447-478. <http://www.jstor.org/stable/30245364>

Lanis, R., & Richardson, G. (2015). Is corporate social responsibility performance associated with tax avoidance? *Journal of Business Ethics*, 127, 439-457. <https://link.springer.com/article/10.1007/s10551-014-2052-8>

Li, G., & Masui, T. (2019). Assessing the impacts of China's environmental tax using a dynamic computable general equilibrium model. *Journal of cleaner production*, 208, 316-324. <https://doi.org/10.1016/j.jclepro.2018.10.016>

Lietz, G. (2013). Tax Avoidance vs. Tax Aggressiveness: A Unifying Conceptual Framework (SSRN Scholarly Paper. ID 2363828). Rochester, NY: Social Science Research Network. <https://papers.ssrn.com/abstract,v.2363828>

Lismiyati, N., & Herliansyah, Y. (2021). The Effect Of Accounting Conservatism, Capital Intensity And Independent Commissionerson Tax Avoidance, With Independent Commissioners As Moderating Variables (Empirical Study On Banking Companies On The Idx 2014-2017). *Dinasti International Journal of Economics, Finance & Accounting*, 2(1), 55-70. <https://doi.org/10.38035/dijefa.v2i1.798>

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

Martinez, A. L., Santana Júnior, J. L. D., & Sena, T. R. (2022). Tax aggressiveness as a determining factor of conditional conservatism in Brazil. *Revista Contabilidade & Finanças*, 33. <https://doi.org/10.1590/1808-057x20221484.en>

Moore, R. D. (2021). The Concave Association between Tax Reserves and Equity Value. *Journal of the American Taxation Association*. 43(1), 107-124. <https://doi.org/10.2308/JATA-17-109>

Nunes, A. M. R. (2010). O modelo linear misto multinível na análise do efeito do desbaste de pinheiros na recuperação ecológica de uma pedreira calcária. (Doctoral dissertation), Lisboa, Portugal

Hidayanto, N., Erasashanti, A. P., Winarti, C. E., &

Nunes, A. M. R. (2010). O modelo linear misto multinível na análise do efeito do desbaste de pinheiros na recuperação ecológica de uma pedreira calcária. (Doctoral dissertation), Lisboa, Portugal

Hidayanto, N., Erasashanti, A. P., Winarti, C. E., & Wahyuningsih, E. (2021). The Effect of Financial Distress and Accounting Conservatism on Tax Avoidance with Leverage As Moderating Variable. *Russian Journal of Agricultural and Socio-Economic Sciences*. <https://doi.org/10.18551/rjoas.2021-11.09>

Oskoue, Z. H., & Sureshjani, Z. H. (2021). Studying the relationship between managerial ability and real earnings management in economic and financial crisis conditions. *International Journal of Finance & Economics*, 26(3), 4574-4589. <https://doi.org/10.1002/ijfe.2031>

Paulo, E., & Mota, R. H. G. (2019). Business cycles and earnings management strategies: a study in Brazilian public firms. *Revista Contabilidade & Finanças*, 30, 216-233. <https://doi.org/10.1590/1808-057x201806870>

Paulré, B. (2004). L'analyse évolutionniste contemporaine du changement technique et de l'innovation. *Cahiers lillois d'Économie et Sociologie*, 43-44, 191-241. <https://www.torrossa.com/en/resources/an/5110440#page=191>

Pereira, C., & Cerqueira, A. (2023). Conservadurismo contable y condiciones económicas: evidencia en los países PIGS y en Reino Unido: Accounting conservatism and economic conditions: Evidence from the GIPS and the UK. *Revista de Contabilidad - Spanish Accounting Review*, 26(1), 46-58. <https://doi.org/10.6018/rcsar.428821>

Raphael, J. H., & Jack, S. (2020) Rethinking international taxation and energy policy post COVID-19 and the financial crisis for developing countries. *Journal of Energy & Natural Resources Law*, 38(4), 465-473. <https://doi.org/10.1080/02646811.2020.1796315>

Sa'ad, H. N., Abubakar, Z., & Suleiman, S. (2023). Accounting conservatism and corporate tax avoidance. *International Journal of Banking and Finance*, 18(1), 51-66. <https://doi.org/10.32890/ijbf2023.18.1.3>

Santos, C. K. S., Costa, P. S., & Silva, P. R. (2016).

Relação entre book-tax differences e conservadorismo contábil: Um estudo das companhias abertas de países da América Latina. *Revista Contemporânea de Contabilidade*, 13(30), 160-192. <http://dx.doi.org/10.5007/2175-8069.2016v13n30p160>

Santos, D. C. D., Guimarães, G. O. M., & Macedo, M. A. S. (2019). Gerenciamento Tributário e Qualidade da Informação Contábil: Análise do Impacto da Agressividade Tributária na Capacidade Informacional do Lucro para o Mercado Brasileiro de Capitais. *Pensar Contábil*, 21(74), 3-10.

Schumpeter, J. A. (1939). *Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process*. New York: McGraw-Hill Book Company.

Scott, W. R. (2015). *Financial accounting theory*. Seventh edition. Pearson

Shevlin, T. (2020). An Overview of Academic Tax Accounting Research Drawing on U.S. Multinational Taxation. *Journal of International Accounting Research*, 19 (3), 9-17. <https://doi.org/10.2308/JIAR-2020-065>

Souza, E. P., & Costa, B. M. N. (2022). Impactos econômicos da covid-19 em cooperativas de Catolé do Rocha PB: contribuição do profissional contábil. *ConTexto - Contabilidade Em Texto*, 22(51), 2-16. Recuperado de <https://seer.ufrgs.br/index.php/ConTexto/article/view/124445>

Van Apeldoorn, L. (2018). BEPS, tax sovereignty and global justice. *Critical Review of International Social and Political Philosophy*, 21(4), 478-499. <https://doi.org/10.1080/13698230.2016.1220149>

Wang, F., Xu, S., Sun, J., & Cullinan, C. P. (2020). Corporate tax avoidance: A literature review and research agenda. *Journal of Economic Surveys*, 34(4), 793-811. <https://doi.org/10.1111/joes.12347>

Watts, R. L. (2003). Conservatism in Accounting Part I: Explanations and Implications. *Accounting Horizons*, 17(3), 207- 221. <https://doi.org/10.2308/acch.2003.17.3.207>

Zhong Y., & Li, W. (2017). Accounting Conservatism: A Literature Review. *Australian Accounting Review*, 27(2), 195-213. <https://doi.org/10.1111/aUAR.12107>