

## Enforcement and accounting conservatism: analysis of publicly capital companies in the G20 member countries

Enforcement e conservadorismo contábil: análise das companhias de capital aberto dos países membros do G20

Enforcement y conservadurismo contable: análisis de las empresas de capital público en los países miembros del G20

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### Abstract

This article aims to analyze the influence of country enforcement on the accounting conservatism of publicly traded companies in the G20 member countries. To this end, 33,228 publicly traded non-financial companies were analyzed in the period from 2016 to 2020, being classified according to their economic development in the analyzed countries (Developed and Emerging), as well as the legal regime adopted by these economies (Common Law and Civil Law). For analysis, a panel data regression was performed, using the conditional conservatism models proposed by Basu (1997) and Ball and Shivakumar (2006). From the comparative analysis of the results, it was possible to show that developed countries tend to present greater conservatism in their accounting numbers, as well as countries with a Common Law legal system, noting that a more rigorous enforcement tends to make companies show greater conservatism in their results.

**Keywords:** Accounting Conservatism; Economic development; Enforcement; Legal System

### Resumo

Este artigo tem como objetivo analisar a influência do *enforcement* dos países no conservadorismo contábil das empresas de capital aberto dos países membros do G20. Para tanto, foram analisadas 33.228 empresas não financeiras de capital aberto no período de 2016 a 2020, sendo classificadas de acordo com seu desenvolvimento econômico nos países analisados (Desenvolvidos e Emergentes), bem como o regime jurídico adotado por essas economias (*Common Law* e *Civil Law*). Para análise, foi realizada regressão de dados em painel, utilizando os modelos de conservadorismo condicional propostos por Basu (1997) e Ball e Shivakumar (2006). A partir da análise comparativa dos resultados, foi possível evidenciar que países desenvolvidos tendem a apresentar maior conservadorismo em seus números contábeis, assim como países com sistema legal de *Common Law*, constatando que um *enforcement* mais rigoroso tende a fazer com que as empresas apresentem maior conservadorismo em seus resultados.

**Palavras-chave:** Conservadorismo Contábil; Desenvolvimento Econômico; *Enforcement*; Sistema Legal

### Resumen

Este artículo tiene como objetivo analizar la influencia del *enforcement* de los países en el conservadurismo contable de las empresas que cotizan en bolsa en los países del G20. Para ello, se analizaron 33.228 empresas no financieras en el período 2016 a 2020, clasificándose según su desarrollo económico en los países (Desarrollados y Emergentes), así como el régimen jurídico adoptado por estas economías (*Common Law* y *Civil Law*). Para el análisis se realizó una regresión de datos de panel, utilizando los modelos de conservadurismo condicional propuestos por Basu (1997) y Ball y Shivakumar (2006). Del análisis comparativo de los resultados, se pudo evidenciar que los países desarrollados tienden a presentar un mayor conservadurismo en sus números

contables, así como los países con un sistema legal *Common Law*, notándose que un *enforcement* más riguroso tiende a que las empresas muestren un mayor conservadurismo en sus resultados.

**Palabras clave:** Conservadurismo Contable; Desarrollo económico; *Enforcement*; Sistema legal

## 1 Introduction

The accounting conservatism adopted by companies has been the subject of study and debate in the accounting literature (Martinez et al., 2022) due to its informative power in times of uncertainty of the outcome (Mrad & Mcmillan, 2022), given the potential to bring real economic benefits for organizations (Manoel & Moraes, 2022). The informative power of companies' accounting conservatism is linked to the conditional way of treating this quality of accounting information, which presupposes that there is greater verification for the recognition of good news in relation to bad news in financial statements (Basu, 1997). This allows the accounting results reported by companies to be a form of early warning for the business in favor of its healthy continuity, recognizing economic losses faster than gains (Ball & Shivakumar, 2006). However, the way in which accounting conservatism is adopted by companies may vary according to the different institutional contexts in which the company is located (Ball et al., 2000).

Factors such as the monitoring of information reported by companies (Hunton et al., 2008), different legal system (Basu, 1997) and national institutional factors (Ball et al., 2000) can affect the quality of reported accounting information, making a decision more or less conservative. This is because these factors present different views of enforcement when compared with each other, with different levels of application and assurance on the adequacy of organizations in complying with laws, rules, regulations, social norms and other standards that may be necessary.

According to Noh and Cho (2022), companies located in culturally more rigid environments prefer to adopt a cautious approach to their accounting information in order to reduce the uncertainty of future economic events, increasing accounting conservatism compared to those located in culturally looser countries. In this line, environments with more severe enforcement instruments, for example, which tend to reduce the possibility of discretion in the accounting decision-making process of managers (Dechow et al., 2010), due to greater monitoring of shareholders and greater protection of investors minority interests (Djankov et al., 2008), can also lead to more conservative accounting choices (Hunton et al., 2008) due to this more cautious approach. On the other hand, lower enforcement scenarios tend to present less monitoring, providing companies with a lower risk of litigation (Arthur et al., 2015) and encouraging their managers to adopt less conservative decisions when reporting their results.

Economic development is often linked to the level of enforcement of accounting research and the quality of results due to its force of legal application (Hope, 2003; La Porta et al., 1998). For Duru et al. (2020), developed countries, which have stricter enforcement, generally have higher quality reported accounting information when compared to emerging economies. This may occur because their markets tend to be more efficient (Zada et al., 2021) and with greater predictability and monitoring (Chen, 2018; Vohra & Fabozzi, 2019), providing results with less discretion and more conservative numbers. In addition, the legal system can affect conditional accounting conservatism (Basu, 1997), causing the way in which the country's laws are applied to influence incentives for the quality of information reported to external users.

However, the literature lacks an empirical consensus on how the accounting conservatism evidenced by companies can be affected by the different levels of enforcement in the countries where they operate their businesses, with different economic developments and legal systems. As for economic development, for example, although the literature points out that developed countries tend to be more efficient (Zada et al., 2021) and generally present a higher level of enforcement, low investor protection and high risk in emerging countries may drive companies to behave more conservatively in relation to reported results, in order to facilitate efficient hiring and reduce the risk of their operations (Chan, 2014).

In addition, there is no consensus on the influence of the legal system on conditional accounting conservatism, even though previous studies have shown that the analysis of the characteristics of legal enforcement is relevant in reporting the results of organizations (Bushman & Piotroski, 2006). According to Nasr and Ntim (2018), while the literature shows that countries with a legal system with greater enforcement tend to boost governance and monitoring mechanisms and, with that, the demand for accounting conservatism in the evidenced information tends to be greater, there is also a trend which stresses that countries with weaker legal systems in terms of enforcement, such as civil law, can encourage managers to make more conservative decisions in favor of compensating for governance weaknesses.

When analyzing companies in an emerging scenario, Xu (2021) showed that not only the looser legal system, with low investor protection, is a determining factor for the level of accounting conservatism adopted, but also that the effect of negligence of the country in the legal application of companies affects the level of accounting conservatism of companies, especially in comparison to developed economies, given that it tends to generate competitiveness incentives for managers in the market, affecting their financial reports. According to Bushman and Piotroski (2006), the legal system of a country creates incentives that influence the behavior of executives, investors, regulators and other market participants, in order to provide more conservative accounting

numbers. For the authors, there is a complex set of accounting standards, legal, market, regulatory and political pressures, in addition to the discretionary accountability exercised by managers, playing a significant role in creating incentives for the timely recognition of losses.

In this context, the research aims to analyze the influence of enforcement on accounting conservatism, both based on macroeconomic indicators and on the legal environment, of publicly traded companies in the G20 member countries. From the analysis of these countries in the period from 2016 to 2020 (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Peru, Russia, Saudi Arabia, South Africa, United Kingdom, United States of America and European Union), segmenting both by economic development and by legal system, it was possible to verify that, as found in the literature, environments with a higher level of enforcement, such as developed and Common Law countries, tend to present greater conditional accounting conservatism of earnings (Basu, 1997) and accounting numbers (Ball & Shivakumar, 2006) when compared to the others.

Taking into account the different levels of enforcement to which developed and emerging countries are affected and the characteristics of the legal system in which companies operate, it is believed that the study of accounting conservatism in these different markets becomes relevant. In addition, the analysis of this relationship, especially in the scenario that precedes one of the biggest world crises of the century (Boscá et al., 2021), under the two different approaches used in the research (comparing economic development and the legal system), brings a comparison of the evolution of accounting conservatism in the five years prior to the pandemic. This is relevant, as it provides subsidies for studies such as the one by Cui et al. (2021), who analyze accounting conservatism as a determining factor for companies and the maintenance of their performance in the market even in periods like this in the pandemic and global crisis scenario, in which the enforcement of each market is one of the key variables in the analysis of accounting conservatism.

Another aspect to be highlighted is that the research results help external users of accounting information to understand how the quality of accounting information is obtained in different economic and legal environments in their critical analysis of the information signaled to the market by companies. With this, the study allows analysts and investors in the analyzed markets to optimize their decision-making process based on the reported financial statements, especially regarding their quality, on the influence of different enforcements on accounting conservatism, based on the comparison of the statements financial institutions from developed and emerging countries, as well as countries that adopt common and civil law systems.

## 2 Hypothesis Development

The quality of accounting information can be analyzed from different perspectives in relation to the results of companies, based on relevance and reliability (Porter & Norton, 2011), as well as measures of persistence, earnings management and accounting conservatism of reported numbers (Dechow et al., 2010; Wang, 2006). This literature on the quality of accounting information treats accounting conservatism as an analysis metric under the main conditional and unconditional aspects of accounting results. According to Ball and Shivakumar (2006), although accounting conservatism is a long-standing accounting practice, there is still confusion in the literature about the differences in approaches between unconditional and conditional conservatism, which makes the topic a controversial topic in Accounting.

Unconditional conservatism can be seen as the asymmetric recognition of assets and equity (Ball & Shivakumar, 2006), so that it privileges the accounting criterion of presenting lower gains for the company and tends to recognize higher losses (Basu, 1997). For Beaver and Ryan (2005), this type of conservatism can also be called "ex ante" or news-independent and concerns the undervaluation of assets in relation to liabilities. In these cases, assets are overvalued, while liabilities are undervalued by companies (Beaver & Ryan, 2005), regardless of macroeconomic factors that may affect such results (Zhong & Li, 2016).

Conditional conservatism, on the other hand, can be conceptualized as a biased recognition that depends on news, or also called "ex post" (Beaver & Ryan, 2005), which assumes that the recognition of losses (bad news) is more easily accepted than gains (good news) for the company (Basu, 1997; Watts, 2003). Thus, businesses that present good news related to their results must undergo greater verifiability than when bad news is announced, as a way of not penalizing potential stakeholders for any expectations in the business that were not effectively met. The higher the level of verification required for profit, the greater the accounting conservatism in recording the transaction (Basu, 1997; Watts, 2003).

Among some of the factors that can influence the conditional conservatism of companies is the enforcement of the environment in which companies find themselves and their characteristics in relation to their economy and legal system (Ball et al., 2000; Basu, 1997; Hunton et al., 2008), due to the institutional efficiency of the control bodies in the inspection and application of norms (Ali & Hwang, 2000; Ball, 2006). According to Duru et al. (2020), the quality of enforcement mechanisms and their level of application, both legally and financially, play a relevant role in the behavior of companies in relation to their results and their financial development. Accounting enforcement is normally carried out by authorized or government-appointed inspection bodies, with the task of inspecting and enforcing the application of accounting standards to publicly traded companies (Brown et al., 2014). This is so that countries around the world that adopt these international accounting standards can report

accounting numbers that allow higher quality and more efficient information to stakeholders (Healy & Palepu, 2001).

Previous studies have analyzed how enforcement affects various aspects of accounting information and business performance (Anagnostopoulou, 2017; Brown et al., 2014; Daske et al., 2008; Ernstberger et al., 2012). Daske et al. (2008), based on an analysis of 26 countries, demonstrate that economies with greater law enforcement had greater incentives to be transparent in their accounting numbers reporting, providing better quality of financial reports. In the same vein, the research by Ernstberger et al. (2012), who examined the enforcement of financial reports in Germany, found that when more stringent enforcement measures are adopted in the country, there is a reduction in earnings management by publicly traded companies.

In general, it appears that in an environment with greater enforcement, the quality of accounting information tends to be superior to the others, with less discretionary accounting numbers (Dechow et al., 2010), as well as greater conservatism in the strategic decisions of organizations facing to their reported accounting numbers (Hunton et al., 2008). On the other hand, environments where enforcement is not properly applied, through rules, laws and regulations, there is a greater incentive for the quality of reported information not to be optimally obtained (Burgstahler et al. 2006; Hope 2003), providing greater discretion in the decision-making process on the reported numbers.

Based on the literature that has shown that in economic environments with greater enforcement there tends to be greater conservatism in accounting numbers, it is relevant to analyze whether these assumptions apply when comparing different countries with each other, especially in the comparative context between the main economies of the world, such as the countries participating in the G20. In this sense, hypothesis 1 is raised.

**H1: Companies traded in countries with higher enforcement are more conservative in accounting numbers than others.**

One of the determinants observed in the literature from the perspective of enforcement is the economic development of countries (Chen, 2018; Vohra & Fabozzi, 2019; Zada, Hassan & Wong, 2021). Such development can be determined by the Gross Domestic Product per capita of a country, in order to classify economies as developed or emerging (Akbas & Sancar, 2021). The influence of economic development on accounting conservatism is linked to characteristics implicit in markets, such as efficiency, transparency (Chan, 2014), volatility (Chen, 2018) and risk (Vohra & Fabozzi, 2019).

The effect of enforcement on accounting conservatism can also be analyzed from the point of view of creditors, bearing in mind the relationship between compliance with covenants in already closed contracts and raising new funds from third parties with the propensity for conservatism of reported results (Hong, 2016; Kravet, 2014; Li, 2015). This occurs because countries with greater legal enforcement have greater levels of monitoring and control over information, in order to increase the protection that creditors will be paid and covenants will be maintained (Hong, 2016; Li, 2015). Developed markets tend to be more efficient than emerging markets (Zada et al., 2021), with greater exchange rate predictability over time (Sharma et al., 2019) and liquidity, with a wide range of risk management instruments (Vohra & Fabozzi, 2019). However, as emerging markets have low investor protection and high risk, the conditional accounting conservatism is relevant to facilitate efficient contracting and reduce the risk of their operations (Chan, 2014).

Taking into account that companies traded in developed economies tend to have a higher level of enforcement than in emerging countries (Ball et al., 2000; Dechow et al., 2010; Hunton et al., 2008; Watts & Zimmerman, 2000; 1983), it is believed that the conservatism of accounting results is greater for companies listed in developed scenarios than in emerging ones, as proposed in hypothesis 1a (H1a).

**H1<sub>a</sub>: Companies traded in developed countries are more conservative in accounting numbers than companies in emerging countries.**

Another aspect that can affect conditional accounting conservatism is the legal system of the environment in which companies are traded and its legal enforcement strength (Basu, 1997; Hope, 2003; La Porta et al., 1998). According to Ali and Hwang (2000), regardless of a country's legal system, if its legal enforcement is not working well, accounting enforcement will not be rigorous, leaving room for greater discretion and less conservative numbers. However, the level at which accounting rules are legislated can impact reported accounting figures, as: civil law countries tend to denote minimum requirements and accounting rules in a highly prescriptive and procedural manner; while common law countries issue laws based on common limits, beyond what is considered illegal, so that experimentation by managers outside these limits is encouraged (Pacini et al., 2000).

Considering that common law countries generally have stronger legal protection from foreign investors than civil law countries (La Porta et al., 1998), and that the distinction between common law and civil law is one of the main proxies of the research empirical studies to analyze institutional differences between countries, authors such as Ball et al. (2000) believe that countries with strong investor protections and high-quality legal systems reflect bad news in earnings figures more timely than companies in countries characterized by weak investor protections and poor-quality justice systems.

Nonetheless, differently from what was expected, Bushman and Piotroski (2006) showed that, in common law countries, high state involvement in companies leads companies to accelerate the recognition of good news and to decelerate the recognition of bad news when compared to companies with less state involvement. In contrast, in countries that adopt the civil law legal system, high state involvement leads companies to delay the

recognition of good news and accelerate the recognition of bad news in relation to companies with less state involvement.

Based on the assumptions of the literature and the lack of empirical and theoretical consensus on how the enforcement characteristics of each legal system adopted in the countries can affect the accounting conservatism of managers, an updated analysis on the subject is necessary. Still, due to the characteristic of common limits, in addition to the legal prescription of enforcement of countries with a common law legal system, it is believed that there is a greater tendency for the accounting numbers to be conservative, aiming not only to adapt to the legal limits, but also to common limits. Thus, hypothesis 1<sub>b</sub> (H1<sub>b</sub>) arises.

**H1<sub>b</sub>: Companies traded in countries that adopt the legal system of common law are more conservative in their accounting numbers than companies in countries that adopt the civil law.**

Unlike previous studies that analyze the relationship between enforcement and accounting conservatism (H1), both from the perspective of economic development (H1a) and the legal system (H1b), this research advances in understanding the relationship through the analysis of different countries and levels of enforcement, comparing such contexts, in order to generate robust results on the influence of enforcement on accounting conservatism.

### 3 Research Methodology

In order to analyze the influence of countries' enforcement on the accounting conservatism of publicly traded companies in the G20 member countries, companies listed on the stock exchange in the following countries were analyzed: Argentina, Australia, Brazil, Canada, China, the Union European (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden), France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom and United States.

For the analysis of enforcement, two proxies were used: economic development (Chen, 2018, Vohra & Fabozzi, 2019; Zada, Hassan & Wong, 2021) and the legal system adopted in the countries (Basu, 1997; Pacini et al., 2000). Thus, to analyze the implicit characteristics of these variables, separately, the sample was divided into four clusters, the first two related to developed and emerging countries, and the last two corresponding to the legal system of common law and civil law. In order to show the number of companies in the sample, as well as their respective representation in each cluster examined, Table 1 is shown.

Table 1  
Sample Composition

G20 Members	Firms by Sector												Sample	Economic Development	Legal System
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
Argentina	0	18	9	17	6	0	2	9	0	6	7	17	106	Emerging	Civil Law
Australia	9	652	122	94	155	0	159	161	0	77	225	16	1,917	Developed	Common Law
Brazil	9	36	64	34	14	0	14	62	0	69	20	48	436	Emerging	Civil Law
Canada	0	1,373	134	106	331	0	340	203	0	0	0	0	2,487	Developed	Common Law
China	0	783	926	362	161	0	451	1,247	0	0	0	0	3,930	Emerging	Civil Law
EU <sup>(a)</sup>	7	214	487	229	93	0	326	569	0	313	501	58	3,162	Developed	Civil Law
EU <sup>(b)</sup>	0	81	159	91	32	1	17	196	0	124	49	20	910	Emerging	Civil Law
EU <sup>(c)</sup>	0	19	37	25	19	0	22	29	0	27	29	2	259	Developed	Common Law
France	4	34	164	45	19	0	81	124	0	50	130	11	719	Developed	Civil Law
Germany	0	42	135	41	19	0	63	126	0	82	143	19	805	Developed	Civil Law
India	22	927	1,126	423	84	1	259	788	0	234	381	56	4,301	Emerging	Civil Law
Indonesia	0	84	133	89	54	0	20	117	0	72	40	8	728	Emerging	Civil Law
Italy	1	15	96	21	10	0	18	83	0	13	52	20	415	Developed	Civil Law
Japan	0	355	852	358	38	0	175	1011	0	0	0	0	2,789	Developed	Civil Law
Mexico	0	23	35	27	2	0	2	15	0	27	4	2	166	Emerging	Civil Law
Russian Federation	0	104	37	39	69	0	10	203	0	24	18	118	698	Developed	Civil Law
Saudi Arabia	2	44	23	20	7	0	8	21	0	28	6	1	207	Emerging	Civil Law
South Africa	4	45	36	27	8	0	8	33	0	38	29	2	287	Emerging	Common Law
Turkey	0	68	88	47	7	0	6	46	0	37	19	10	395	Emerging	Civil Law
United Kingdom	5	131	199	68	97	0	113	210	0	86	196	15	1,595	Developed	Common Law
United States	31	490	1,029	0	681	0	1,415	1,182	1	406	0	117	5,352	Developed	Common Law
<b>Total</b>													<b>31,664</b>		

**Notes.** EU = European Union. <sup>(a)</sup> Austria, Belgium, Croatia, Denmark, Estonia, Finland, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain and Sweden; <sup>(b)</sup> Bulgaria, Czech Republic, Greece, Hungary and Romania; <sup>(c)</sup> Cyprus, Ireland and Malta. (1) = Academic and Educational Services; (2) = Basic Materials; (3) = Cyclical Consumers; (4) = Non-cyclical Consumers; (5) = Energy; (6) = Government Activity; (7) = Health; (8) = Industrial; (9) = Institutions, Associations and Organizations; (10) = Real estate; (11) = Technology; (12) = Utilities.

For the analysis, data from publicly traded non-financial companies from the G20 member countries were used in the period from 2016 to 2020. It was chosen not to analyze the accounting conservatism of financial

institutions together with the other companies under analysis due to their structure of differentiated capital and with specific regulation, aiming to provide greater comparability between the analyzed companies (Peasnell et al., 2000). Even so, the analysis of recent years of accounting conservatism is relevant in order to capture the aspects and idiosyncrasies that precede the environment of uncertainty at a global level that started in 2020 with the Coronavirus (COVID-19) pandemic.

Regarding the estimation of the accounting conservatism of the analyzed companies, the conditional conservatism model was used, adapting the models proposed by Basu (1997) and Ball and Shivakumar (2006). The analysis using these two models is relevant, as Basu's (1997) model makes it possible to analyze the conservatism of accounting results based on market measures, such as earnings per share and price per share. Ball and Shivakumar's (2006) model, on the other hand, uses internal variables related to changes in accounting net income as result proxies.

Concerning the research variables, Table 2 elucidates not only the variables of the Basu (1997) and Ball and Shivakumar (2006) models, but also the variables of interest in economic development and the legal system and the control variables at the level of company and country.

Table 2

**Description of the Variables**

Variable	Description	Source	References
<i>Basu's Conditional Conservatism Model</i>			
Dependent	$X_{it}/P_{it-1}$ $X_{it}$ = Earnings per share of company $i$ in year $t$ ; $P_{it-1}$ = Price per share of company $i$ in year $t-1$ ;		
Independent	$DR_{it}$ Dummy of negative economic return of company $i$ in year $t$ , assigning 1 and the economic return is negative and 0 if the economic return is positive or null;	Thomson Reuters	Basu (1997).
	$R_{it}$ Economic return per share of company $i$ in year $t$ represented by $(P_{it}-P_{it-1})/P_{it-1}$ ;		
<i>Ball e Shivakumar's Conditional Conservatism Model</i>			
Dependent	$\Delta NI_{it}$ Variation in accounting net income of company $i$ from year $t-1$ to year $t$ ;		
Independent	$D\Delta NI_{it}$ Dummy of negative variation in the accounting net income of company $i$ from year $t-1$ to year $t$ , assigning 1 for $\Delta NI < 0$ and 0 for other cases;	Thomson Reuters	Ball and Shivakumar (2006).
	$\Delta NI_{it-1}$ Variation in accounting net income of company $i$ from year $t-2$ to year $t-1$ ;		
<i>Company and Country Level Information</i>			
Independent of Interest	$DEV_t$ Economic development dummy, being 1 for developed countries and 0 for emerging countries;	World Bank	Ball et al. (2000); Dechow et al. (2010); Hunton et al. (2008); Watts and Zimmerman (1983).
	$COML_t$ Legal system dummy adopted, being 1 for <i>Common law</i> legal system and 0 for civil law;	World Bank	Bushman and Piotroski (2006); Hope (2003); La Porta et al. (1998).
Independent of Control	$GDP_g$ Real GDP growth, represented by the percentage of GDP growth from one year to another;	Standard & Poor's	Crawley (2015)
	$Risk_t$ Credit rating from Standard & Poor's by country, coded as: AAA = 1; AA+ = 2; AA = 3; AA- = 4; A+ = 5; A = 6; A- = 7; BBB+ = 8; BBB = 9; BBB- = 10; BB+ = 11; BB = 12; BB- = 13; B+ = 14; B = 15; B- = 16; CCC+ = 17; CCC = 18; CCC- = 19; CC = 20; C = 21; D = 22.	World Bank	Martins and Barros (2021); Pan et al. (2015).
	$IFRS_{et}$ Experience of mandatory adoption IFRS by the number of years from the onset;	IFRS Foundation	Houqe and Monem (2016); Martins and Barros (2021).
	$RL_t$ Rule of law indicator, scaled from 0 to 100;	World Bank (WGI)	Gonzalez and García-Meca (2014); Martins and Barros (2021).
	$RQ_t$ Regulatory quality, scaled from 0 to 100;	World Bank (WGI)	Gonzalez and García-Meca (2014); Martins and Barros (2021).
	Sector	Activity sector of publicly traded companies from G20 member countries.	Thomson Reuters

For the analysis at the company and country level, it was decided to use variables that represent the macroeconomic and institutional environment of each country, as well as the sector of economic activity in which companies negotiate their operations. According to Crawley (2015), GDP is a macroeconomic indicator closely observed by countries, considering that it provides a summary measure of national economic conditions that are linked to the aggregate profits of companies produced in these economies. Therefore, the analysis of GDP growth as a control for the conservatism of the results of companies found in different countries becomes an indispensable variable at the country level.

Another macroeconomic indicator at the informational level of the country is the credit risk (Martins & Barros, 2021), which not only determines the country's level of payment capacity, but can also be reflected in the

way the market and, consequently, the companies that comprise them are seen by their investors. Companies in riskier markets tend to behave more conservatively in relation to their results, aiming to give greater credibility to their stakeholders, even in a riskier scenario. The level of regulatory compliance of countries can also be analyzed, especially with regard to mandatory IFRS adoption. According to Houqe and Monem (2016), emerging countries tend to benefit more from the IFRS experience compared to developed countries and the greater their experience of mandatory adoption, the lower the perception of corruption.

This enforcement at the institutional level can also be seen in the government's ability to formulate and implement solid policies and regulations, as well as in the compliance with contractual and corporate rules by companies in these environments. In line with the Worldwide Governance Indicators (WGI), Regulatory Quality reflects the perception of the government's ability to formulate and implement sound policies and regulations that enable and promote private sector development. Even so, variables such as the Rule of Law can affect the way companies behave in relation to their legal system, as well as their opportunistic position in the decision-making process (González & García-Meca, 2014). Such metrics correspond to society's perceptions of trust and compliance and, in particular, the quality of contract enforcement, property rights, police and courts, as well as the likelihood of crime and violence.

Based on the research variables, the Basu (1997) and Ball and Shivakumar (2006) models were adapted in a logical order of operationalization in three stages, as explained in Table 3.

Table 3

**Operational steps of the empirical model of conditional conservatism**

Step 1: General model of conditional conservatism for comparison purposes, based on Basu (1997) and Ball and Shivakumar (2006), respectively.	Equations
$(X_{it} / P_{it-1}) = \alpha + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 DR_{it} R_{it} + \epsilon_{it}$	1
$\Delta NI_{it} = \alpha + \beta_1 \Delta \Delta NI_{it} + \beta_2 \Delta NI_{it-1} + \beta_3 \Delta NI_{it-1} \Delta \Delta NI_{it-1} + \epsilon_{it}$	2
<b>Step 2: Analysis of the relationship between enforcement, through economic development and the legal system, and conditional conservatism.</b>	
$(X_{it} / P_{it-1}) = \alpha + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 DR_{it} R_{it} + \beta_4 Development_{it} + \beta_5 D_{it} Development_{it} + \beta_6 R_{it} Development_{it} + \beta_7 D_{it} R_{it} Development_{it} + \epsilon_{it}$	3
$(X_{it} / P_{it-1}) = \alpha + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 DR_{it} R_{it} + \beta_4 LegalSystem_{it} + \beta_5 D_{it} LegalSystem_{it} + \beta_6 R_{it} LegalSystem_{it} + \beta_7 D_{it} R_{it} LegalSystem_{it} + \epsilon_{it}$	4
$\Delta NI_{it} = \alpha + \beta_1 \Delta \Delta NI_{it} + \beta_2 \Delta NI_{it-1} + \beta_3 \Delta NI_{it-1} \Delta \Delta NI_{it} + \beta_4 Development_{it} + \beta_5 \Delta \Delta NI_{it} Development_{it} + \beta_6 \Delta NI_{it-1} Development_{it} + \beta_7 \Delta NI_{it-1} \Delta \Delta NI_{it} Development_{it} + \epsilon_{it}$	5
$\Delta NI_{it} = \alpha + \beta_1 \Delta \Delta NI_{it} + \beta_2 \Delta NI_{it-1} + \beta_3 \Delta NI_{it-1} \Delta \Delta NI_{it} + \beta_4 LegalSystem_{it} + \beta_5 \Delta \Delta NI_{it} LegalSystem_{it} + \beta_6 \Delta NI_{it-1} LegalSystem_{it} + \beta_7 \Delta NI_{it-1} \Delta \Delta NI_{it} LegalSystem_{it} + \epsilon_{it}$	6
In addition to the interaction analysis, the analysis of the original model will still be performed considering the economic development and legal system dummies as distinct samples. The regression of the data from Equations 1 and 2 was estimated for Economic Development samples, considering Development as DEV (Developed) and EMER (Emerging), separately, as well as for Legal System considering LegalSystem as COML=1 (Common Law) and CIVL=0 (Civil Law).	
<b>Step 3: Model control analysis.</b>	
$(X_{it} / P_{it-1}) = \alpha + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 DR_{it} R_{it} + \beta_4 Control_{it} + \beta_5 D_{it} Control_{it} + \beta_6 R_{it} Control_{it} + \beta_7 D_{it} R_{it} Control_{it} + \epsilon_{it}$	7, 8, 9, 10, 11, 12.
$\Delta NI_{it} = \alpha + \beta_1 \Delta \Delta NI_{it} + \beta_2 \Delta NI_{it-1} + \beta_3 \Delta NI_{it-1} \Delta \Delta NI_{it} + \beta_4 Control_{it} + \beta_5 \Delta \Delta NI_{it} Control_{it} + \beta_6 \Delta NI_{it-1} Control_{it} + \beta_7 \Delta NI_{it-1} \Delta \Delta NI_{it} Control_{it} + \epsilon_{it}$	13, 14, 15, 16, 17, 18.
The variable <i>Control</i> corresponds to the control variables, respectively, in each equation: GDPg, Risk, IFRSe, RL, RQ, Sector.	
$(X_{it} / P_{it-1}) = \alpha + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 DR_{it} R_{it} + \beta_4 GDPg_t + \beta_5 Risk_t + \beta_6 IFRSe_t + \beta_7 RL_t + \beta_8 RQ_t + \beta_9 Sector_{it} + \epsilon_{it}$	19
$\Delta NI_{it} = \alpha + \beta_1 \Delta \Delta NI_{it} + \beta_2 \Delta NI_{it-1} + \beta_3 \Delta NI_{it-1} \Delta \Delta NI_{it} + \beta_4 GDPg_t + \beta_5 Risk_t + \beta_6 IFRSe_t + \beta_7 RL_t + \beta_8 RQ_t + \beta_9 Sector_{it} + \epsilon_{it}$	20
In all these equations from step 3, the economic development and legal system dummies were analyzed as distinct samples. Thus, the regression of the data from Equations 7 to 20 was estimated for DEV (Developed) and EMER (Emerging) samples, as well as COML = 1 (Common Law) and CIVL = 0 (Civil Law), separately.	

**Notes.** The description of the corresponding variables are presented in Table 1;  $\alpha$  = Interception term;  $\beta_2$  = Reflects the opportunity for accounting profit, such as the recognition of economic return through accounting profit;  $\beta_1$  and  $\beta_3$  = Reflect the asymmetric recognition of the economic return of good and bad news, by accounting profit;  $\epsilon_i$  = Regression error term. It should be noted that all non-binary variables were winsorized to 1% to handle outliers.

In Equations 1 and 2, the general models of conditional conservatism were analyzed for the entire sample studied. For the analysis of the level of accounting conservatism using the model of Basu (1997), the coefficient of interaction of bad news ( $DR_{it} R_{it}$ ,  $DEV_{it} DR_{it} R_{it}$  and  $COML_{it} DR_{it} R_{it}$ ) and its sign for the dependent variable. This is because, according to the author who proposed the model, accounting conservatism implies that the  $\beta_3$  coefficient is positive, since bad news (negative return) should be reflected in profit to a greater extent than good news (positive return). Unlike Basu's (1997) analysis of accounting conservatism, Ball and Shivakumar's (2006) model assumes that the model can be explained through the coefficient of determination ( $R^2$ ). The analysis logic in this case is based on assumptions of both the persistence of accounting results and bad news represented by the dummy variable of negative return on net income. Based on this, the  $R^2$  results for each cluster are compared, so that the greater the explanatory nature of the model, the greater the level of conservatism of the accounting results.

In relation to equations 3 to 6, the models are analyzed considering the influence of enforcement in each environment. For this, enforcement was analyzed both from the point of view of the interactions between economic development and the legal system and accounting conservatism, as well as the analysis of accounting conservatism considering each of the variables of interest as distinct samples. Thus, it is possible to minimize potential problems arising from the effects of interactions in the general model.

It is worth mentioning that derivation indicators based on the regressions of Basu (1997) or Ball and Shivakumar (2006) models were not used in this research, as in the case of the C-score by Khan and Watts (2009), for example, due to possible interpretation problems generated by these indicators. According to Byzalov and Basu (2021), although some researchers use regression-based Scores of a particular stage 1 model as a dependent variable in stage 2 (as in the case of C-Score, F-Score and Z-Score), this use cannot capture new sources of variation and are often considered arbitrary technical assumptions. For the authors, the best way to analyze the effects of a given variable on accounting conservatism can only be estimated with the inclusion of test and control variables in the pre-determined models of stage 1, avoiding possible important biases and interpretation problems.

Using Stata® software, multiple regression was performed in an unbalanced panel, as well as model specification tests (Hausman, Breusch-Pagan and Chow), denoting the fixed effects model as the most appropriate. Through tests of multicollinearity (VIF: 1.91 and 1.33), heteroscedasticity (p-value: 0.000 and 0.000) and autocorrelation (p-value: 0.000 and 0.000) for the Basu and BS Models, respectively. There was a need to use a methodology that provided robust standard errors and, therefore, it was decided to use clustering controlling the fixed effect by country and year. Based on the analysis of data normality, it was decided to use Spearman's correlation matrix for non-parametric data. In addition, the sample comparison tests used (Kruskall-Wallis by country and Mann-Whitney by development and by legal system) showed significant differences between the analyzed samples, highlighting the need to analyze these realities separately.

#### 4 Results and Discussion

Table 4 presents the descriptive statistics of the dependent variables of the conditional accounting conservatism models of Basu (1997) and Ball and Shivakumar (2006), corresponding to weighted earnings per share ( $X_{it}/P_{it-1}$ ) and to the variation in net income ( $\Delta NI_{it}$ ), respectively. It should also be noted that the variables were winzORIZED to 1%.

Table 4  
Descriptive statistics by country development and legal system

Variable	Metric	Developed	Emerging	Common Law	Civil Law	Total
$X_{it}/P_{it-1}$	Observations	76,245	44,900	80,130	41,015	121,145
	Average	2.892	4.792	3.312	4.151	3.596
	Standard deviation	5.069	7.309	6.259	5.632	6.067
	Minimum	-0.017	-0.017	-0.017	-0.017	-0.017
	Maximum	19.359	19.359	19.359	19.359	19.359
	Mann-Whitney		***		***	
$\Delta NI_{it}$	Observations	10,481	7,987	13,095	5,373	18,468
	Average	-0.225	-0.231	-0.225	-0.234	-0.228
	Standard deviation	0.240	0.324	0.301	0.218	0.280
	Minimum	-0.826	-0.826	-0.826	-0.826	-0.826
	Maximum	0.170	0.170	0.170	0.170	0.170
	Mann-Whitney		***		***	

Notes. \*\*\* is significant at 1%, 5% and 10%, respectively.

Based on the data presented in Table 4 on the market result variable, analyzed by earnings per share ( $X_{it}/P_{it-1}$ ), it appears that although there is a higher average market indicator in emerging countries than in developed ones, the variability of profit values in developed economies is lower than in emerging economies, denoting more efficient markets (Zada et al., 2021). Still, when analyzing the legal system, it is evident that countries that adopt common law have companies with greater variability when compared to countries that adopt civil law.

Regarding the variation of the accounting profit ( $\Delta NI$ ) of the companies under study, it is possible to evidence that, on average, the sample presented a decrease in its accounting profit in the last five years (negative averages of variation of the profit for the scenarios). However, as observed for the earnings per share variable, the lowest standard deviations were observed for developed economies, which can be explained by the tendency of these countries to present greater conservatism in accounting results due to their stricter enforcement characteristics and requirements of monitoring (Basu, 1997; Dechow et al., 2010; Hunton et al., 2008).

It is noteworthy that to analyze the difference in means of the dependent variables of the research in comparison with the enforcement by economic development and proxies of the legal system, the Mann-Whitney

test was preceded to compare non-parametric samples, showing a significant difference between the developed and emerging countries, as well as common law and civil law adopters.

With regard to country-level information, Figure 1 clarifies in a comparative way the results of GDP growth, credit risk, IFRS experience, rule of law and regulatory quality, both in terms of economic development and the legal system. over the years.

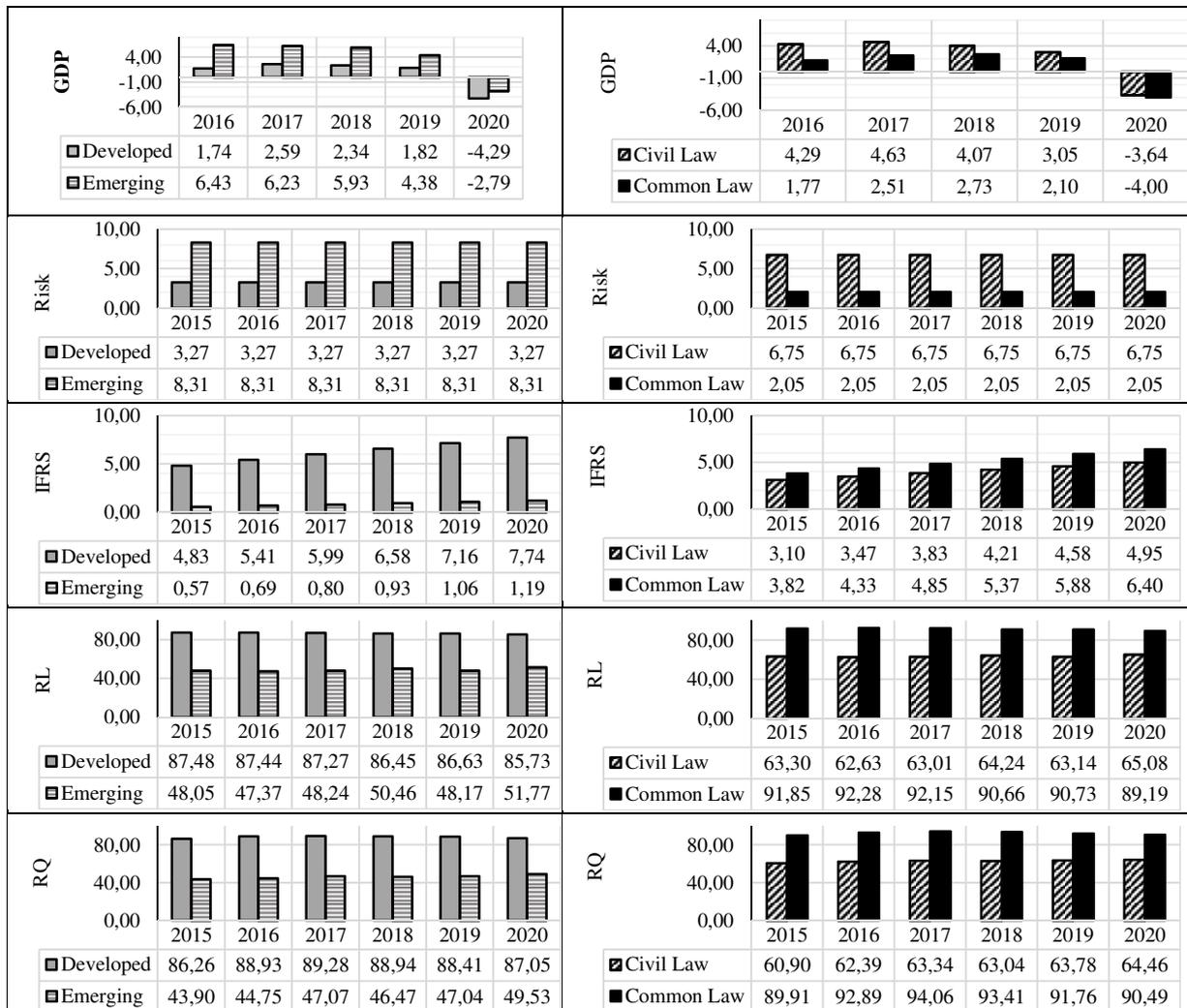


Figure 1. Comparative graphs by Economic Development and Legal System

Based on Figure 1, it can be noted that, in general, GDP growth for emerging and civil law countries is higher than for developed and common law economies. This result is in line with expectations, since developed countries tend to show less variation in GDP over time, as these markets are already solid and with continuous growth, less discrepant from one year to the next. Emerging countries, on the other hand, tend to present emerging growth, as the name implies. This can also be seen when comparing legal systems, so that economies with greater shareholder protection and stronger economies, such as those that adopt common law (La Porta et al., 1998; Bushman & Piotroski, 2006), less tend to have GDP variation compared to others. However, it is worth noting that in 2020, due to the uncertainties generated by the covid-19 pandemic (Boscá et al., 2021), GDP growth became negative, on average, for all scenarios analyzed, being more pronounced for developed countries and adopters of the common law legal system, contrary to expectations.

Another aspect analyzed is the credit risk (Risk) of the markets, which, as expected, is twice as high in emerging economies than in developed ones, denoting twice the debt repayment capacity of countries in developed scenarios compared to emerging ones. In addition, the legal system also denoted discrepant characteristics of credit risk between customary law and civil law adopters, presenting 200% lower credit risk for countries with greater legal protection from foreign investors, such as customary law adopters.

Regarding the validity of mandatory IFRS adoption, it was found that emerging economies still have few years of factual adoption, which can affect the comparability between the statements of companies belonging to these markets, as well as their level of regulatory compliance, given the that the greater the experience of mandatory adoption, the lower the perception of corruption (Houque & Monem, 2016). On the other hand, the

differences between the legal systems and the mandatory adoption of IFRS are not so discrepant, which may lead to the belief that, contrary to what was expected, the legal system is not decisive for such an experience.

Regarding the government's ability to formulate and implement sound policies and regulations, as well as corporate and contractual compliance by companies in these environments, the figure presents higher indicators of rule of law (RL) for both developed and common law economies. As expected, it is believed that in countries with these characteristics, society has greater confidence in compliance with rules, quality of contract execution, property rights, police and courts. Likewise, regulatory quality (RQ) is also shown to be higher in these economies, so the perception of the government's ability to formulate and implement sound policies and regulations is greater in these cases.

Regarding the association between the research variables, Table 5 elucidates the Spearman and Pearson Correlation Matrix for the samples of economic development (Developed and Emerging) and legal system (Common Law and Civil Law).

Table 5

**Correlation Matrix****Spearman (non-parametric)**

		<i>Economic Development</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
(1) $\Delta N_{it}$	1	-0,0790 <sup>***</sup>	0,0346	0,0712 <sup>**</sup>	-0,0163	-0,0937 <sup>***</sup>	0,0728 <sup>**</sup>	0,1031 <sup>**</sup>	
(2) $X_{it}/P_{t-1}$	-0,0352 <sup>***</sup>	1	0,0163	-0,3732 <sup>***</sup>	-0,0635 <sup>***</sup>	-0,2527 <sup>***</sup>	-0,2975 <sup>***</sup>	0,3225 <sup>***</sup>	
(3) $\Delta R_{t-1}$	0,0613 <sup>***</sup>	-0,0016	1	-0,0863 <sup>***</sup>	0,0495 <sup>***</sup>	0,0579 <sup>***</sup>	-0,0490 <sup>***</sup>	0,0703 <sup>***</sup>	
(4) $Risk_{it}$	-0,0123	-0,1419 <sup>**</sup>	0,1268 <sup>***</sup>	1	0,1291 <sup>**</sup>	0,0073	0,6322 <sup>***</sup>	-0,5717 <sup>***</sup>	
(5) $RQ_{it}$	0,001	0,2943 <sup>***</sup>	-0,0757 <sup>***</sup>	-0,6123 <sup>***</sup>	1	0,2792 <sup>**</sup>	0,2439 <sup>***</sup>	-0,5057 <sup>***</sup>	
(6) $RL_{it}$	-0,0109	0,2216 <sup>***</sup>	-0,0496 <sup>***</sup>	-0,4900 <sup>***</sup>	0,8503 <sup>***</sup>	1	-0,2420 <sup>***</sup>	-0,4141 <sup>***</sup>	
(7) $IFRSe_{it}$	-0,0722 <sup>***</sup>	0,4150 <sup>***</sup>	-0,1695 <sup>***</sup>	-0,1841 <sup>**</sup>	0,4445 <sup>***</sup>	0,3207 <sup>***</sup>	1	-0,4912 <sup>***</sup>	
(8) $GDPg_{it}$	0,0981 <sup>***</sup>	0,0798 <sup>**</sup>	-0,0089	-0,2887 <sup>**</sup>	0,2884 <sup>**</sup>	0,1166 <sup>**</sup>	-0,1367 <sup>**</sup>	1	

**Legal System**

(1) $\Delta N_{it}$	1	-0,1224 <sup>***</sup>	0,1350 <sup>***</sup>	-0,0490 <sup>**</sup>	0,1201 <sup>***</sup>	0,0826 <sup>***</sup>	0,0079 <sup>***</sup>	0,0326 <sup>***</sup>
(2) $X_{it}/P_{t-1}$	-0,0516 <sup>***</sup>	1	-0,1964 <sup>***</sup>	0,0649 <sup>***</sup>	-0,4781 <sup>***</sup>	-0,5290 <sup>***</sup>	-0,0612 <sup>***</sup>	0,4961 <sup>***</sup>
(3) $\Delta R_{t-1}$	0,0192 <sup>**</sup>	0,0631 <sup>***</sup>	1	-0,1348 <sup>**</sup>	0,2676 <sup>***</sup>	0,2409 <sup>***</sup>	-0,0845 <sup>***</sup>	-0,1150 <sup>***</sup>
(4) $Risk_{it}$	-0,0240 <sup>**</sup>	-0,0584 <sup>***</sup>	0,0034	1	-0,5518 <sup>***</sup>	-0,5654 <sup>***</sup>	-0,0014	-0,1086 <sup>***</sup>
(5) $RQ_{it}$	-0,0148	0,3659 <sup>***</sup>	-0,0515 <sup>***</sup>	-0,3982 <sup>***</sup>	1	0,8933 <sup>***</sup>	0,3209 <sup>***</sup>	-0,4954 <sup>***</sup>
(6) $RL_{it}$	-0,0208 <sup>**</sup>	0,3284 <sup>***</sup>	-0,0649 <sup>***</sup>	-0,4592 <sup>***</sup>	0,9360 <sup>***</sup>	1	0,2527 <sup>***</sup>	-0,5579 <sup>***</sup>
(7) $IFRSe_{it}$	-0,0577 <sup>***</sup>	0,4391 <sup>***</sup>	-0,0880 <sup>**</sup>	0,1086 <sup>**</sup>	0,5746 <sup>***</sup>	0,4929 <sup>***</sup>	1	-0,2617 <sup>**</sup>
(8) $GDPg_{it}$	0,0722 <sup>***</sup>	-0,0306 <sup>**</sup>	0,0661 <sup>***</sup>	-0,1541 <sup>**</sup>	0,2567 <sup>***</sup>	0,2471 <sup>***</sup>	-0,3285 <sup>***</sup>	1

**Pearson (parametric)**

		<i>Economic Development</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
(1) $\Delta N_{it}$	1	-0,0450 <sup>***</sup>	0,0262 <sup>***</sup>	-0,0084 <sup>***</sup>	-0,0142 <sup>***</sup>	-0,0468 <sup>***</sup>	0,0084 <sup>***</sup>	0,1730 <sup>***</sup>	
(2) $X_{it}/P_{t-1}$	-0,0704 <sup>***</sup>	1	-0,0429 <sup>***</sup>	0,0356 <sup>***</sup>	0,0811 <sup>***</sup>	-0,1750 <sup>***</sup>	-0,0880 <sup>***</sup>	0,0212 <sup>***</sup>	
(3) $\Delta R_{t-1}$	0,0861 <sup>***</sup>	-0,1520 <sup>***</sup>	1	-0,0573 <sup>***</sup>	-0,0451 <sup>***</sup>	0,009 <sup>***</sup>	-0,0318 <sup>***</sup>	0,1010 <sup>***</sup>	
(4) $Risk_{it}$	0,0051	-0,1999 <sup>***</sup>	0,0774 <sup>***</sup>	1	0,0935 <sup>***</sup>	0,2732 <sup>***</sup>	0,5420 <sup>***</sup>	-0,3374 <sup>***</sup>	
(5) $RQ_{it}$	0,0055	0,1307 <sup>***</sup>	-0,0240 <sup>***</sup>	-0,8200 <sup>***</sup>	1	-0,1591 <sup>***</sup>	0,4608 <sup>***</sup>	-0,3711 <sup>***</sup>	
(6) $RL_{it}$	0,0152 <sup>**</sup>	0,0746 <sup>***</sup>	0,0012	-0,8244 <sup>***</sup>	0,9634 <sup>***</sup>	1	-0,1842 <sup>***</sup>	-0,1443 <sup>***</sup>	
(7) $IFRSe_{it}$	-0,0616 <sup>***</sup>	0,2305 <sup>***</sup>	-0,1548 <sup>***</sup>	0,0925 <sup>***</sup>	-0,0408 <sup>***</sup>	-0,1322 <sup>***</sup>	1	-0,3233 <sup>***</sup>	
(8) $GDPg_{it}$	0,1236 <sup>***</sup>	0,0633 <sup>***</sup>	-0,0183 <sup>***</sup>	-0,0192 <sup>***</sup>	0,0528 <sup>***</sup>	-0,0107 <sup>***</sup>	-0,0099 <sup>***</sup>	1	

**Legal System**

(1) $\Delta N_{it}$	1	-0,0544 <sup>***</sup>	0,1159 <sup>***</sup>	-0,0456 <sup>***</sup>	0,0492 <sup>***</sup>	0,0490 <sup>***</sup>	-0,0549 <sup>***</sup>	0,1662 <sup>***</sup>
(2) $X_{it}/P_{t-1}$	-0,0733 <sup>***</sup>	1	-0,1495 <sup>***</sup>	0,1474 <sup>***</sup>	-0,2436 <sup>***</sup>	-0,2670 <sup>***</sup>	-0,1087 <sup>***</sup>	0,1550 <sup>***</sup>
(3) $\Delta R_{t-1}$	0,0511 <sup>***</sup>	-0,1082 <sup>***</sup>	1	-0,1598 <sup>***</sup>	0,2499 <sup>***</sup>	0,2468 <sup>***</sup>	-0,0190 <sup>***</sup>	-0,0907 <sup>***</sup>
(4) $Risk_{it}$	0,0272 <sup>**</sup>	-0,1285 <sup>***</sup>	0,0069	1	-0,6514 <sup>***</sup>	-0,6429 <sup>***</sup>	-0,2690 <sup>***</sup>	0,0625 <sup>***</sup>
(5) $RQ_{it}$	-0,0384 <sup>***</sup>	0,2216 <sup>***</sup>	-0,0373 <sup>***</sup>	-0,8561 <sup>***</sup>	1	0,9372 <sup>***</sup>	0,5468 <sup>***</sup>	-0,4059 <sup>***</sup>
(6) $RL_{it}$	-0,0380 <sup>***</sup>	0,1167 <sup>***</sup>	-0,0193 <sup>***</sup>	-0,9346 <sup>***</sup>	0,9231 <sup>***</sup>	1	0,4181 <sup>***</sup>	-0,3635 <sup>***</sup>
(7) $IFRSe_{it}$	-0,0360 <sup>***</sup>	0,3463 <sup>***</sup>	-0,1246 <sup>***</sup>	0,1593 <sup>***</sup>	0,2203 <sup>***</sup>	-0,0466 <sup>***</sup>	1	-0,2909 <sup>***</sup>
(8) $GDPg_{it}$	0,0830 <sup>***</sup>	0,0187 <sup>**</sup>	0,0380 <sup>***</sup>	-0,0590 <sup>***</sup>	0,2335 <sup>***</sup>	0,1700 <sup>***</sup>	-0,1000 <sup>***</sup>	1

**Notes.** Developed and common law countries are those on the left and bottom of the matrix; emerging and civil law in the right and upper part of the matrix; \*\*\*, \*\*, \* is significant at 1%, 5% and 10%, respectively.

When analyzing the association between the research variables, it is possible to perceive that there is a greater correlation between the variation of the return and the variation of the accounting profit in the developed scenarios, which may be an indication that the returns, in these markets, tend to better explain their result than in emerging economies, in line with the literature that in these stricter enforcement environments, companies are more conservative in their results (Ball et al., 2000; Dechow et al., 2010; Hunton et al., 2008; Watts & Zimmerman, 1983).

Table 6 clarifies the results resulting from the regression of panel data for both models of conditional conservatism object of study, with the fixed effects of the countries that make up the sample.



In the model of Basu (1997), which analyzes accounting conservatism from the interaction of the dummy of negative return and the return of previous periods ( $DR_t^* \Delta R_{t-1}$ ), more conservative results are presented (significant at 1% and with economic coefficients superior) for the accounting numbers of developed countries, when compared to emerging countries, both within the scope of the general regression (1) and within the scope of the separate analysis of each of the samples of economic development (3 and 4) denoting the highest economic coefficients in the models applied to information on companies from developed countries (7.584) and from the Common Law legal system (10.647).

This result is in accordance with what is recommended in the literature for countries with a higher level of enforcement (in this case, developed countries), which would present more conservative results when compared to markets with less strict enforcement, as advocated by Noh and Cho (2022). Even so, it is important to highlight that the variable that represents the asymmetric recognition of bad news about the company's earnings is also positive and significant in emerging scenarios, which can be a form of compensation for the companies analyzed in these emerging markets, considering the relevance of more conservative accounting numbers to facilitate efficient contracting and reduce the risk of operations in these markets (Chan, 2014).

In the same way that it was verified by the model of Basu (1997), the analysis of the variation of the net income guided by Ball and Shivakumar (2006) showed results that are in line with the expected, so that the developed countries have a coefficient of determination of the model ( $R^2$ ) higher than that of emerging countries, as well as a higher F-test value, showing the model as more statistically significant in general. This shows that in these countries, where enforcement is more rigorous, there is greater protection for investors (Chan, 2014), with more conservative accounting figures. These results are in agreement with the assumptions raised in the literature about the quality of accounting information and the level of enforcement (Ball et al., 2000; Dechow et al., 2010; Hunton et al., 2008; Watts & Zimmerman, 1983), providing support that hypothesis 1<sub>a</sub> (H1<sub>a</sub>) cannot be rejected.

As for the legal system, as expected, both in the model of Basu (1997) and in the model of Ball and Shivakumar (2006), it was shown that countries that adopt the common law have greater conservatism of accounting results than countries that adopt the civil law. This reinforces that, for the analyzed sample, companies located in common law countries, which generally have greater legal protection against foreign investors (La Porta et al., 1998), tend to recognize bad news in reported earnings more timely than those in countries with weaker investor protection and less enforced legal systems (Bushman & Piotroski, 2006; Nasr & Ntim, 2018), such as civil law adopters. Thus, as recommended by the current literature (Basu, 1997; Hope, 2003; La Porta et al., 1998; Xu, 2021), the legal system proves to be significant for the analysis of accounting conservatism in both analyzed models, so that hypothesis 1<sub>b</sub> (H1<sub>b</sub>) cannot be rejected.

When the control variables were included together in the analyzed models, it was possible to notice that, although they all proved to be significant, their economic coefficient is low for all models. For this, although they are relevant variables in terms of information about the countries and companies under study, they are not representative in the models of conservatism analyzed in this research.

In this context, in general, as expected, it appears that in an environment where there is stricter supervision, the accounting numbers disclosed tend to be more conservative and, therefore, with higher quality of accounting information for external users. Hence, for the sample of countries analyzed, the hypothesis that companies traded in countries with greater enforcement show greater conservatism in accounting numbers than the others (H1) cannot be rejected.

## 5 Conclusion

The research aimed to analyze the influence of countries' enforcement on the accounting conservatism of publicly traded companies in the G20 member countries from 2016 to 2020, focusing on their economic development (developed and emerging), as well as their legal system (common law and civil law). To do so, it used conditional accounting conservatism estimation models, based on Basu (1997) and Ball and Shivakumar (2006), through regression of unbalanced panel data for more than 33,000 companies analyzed.

As a result, although Basu's (1997) model presents distinctions in relation to the assumptions of the literature and findings with the application of the Ball and Shivakumar (2006) model, in general, companies that are present in developed markets and, consequently, with stringent enforcement when compared to emerging economies, showed greater conservatism in reported accounting results. From the point of view of the legal system, the results demonstrate, for both models analyzed, a greater accounting conservatism for companies that adopt customary law, as expected.

In this context, the results suggest that, in the comparative analysis between the G20 member countries, the level of enforcement is relevant in the accounting conservatism of the numbers disclosed by companies, contributing to the literature on the subject of the quality of accounting information of companies that are constant in environments with differentiated enforcement in relation to the use of international accounting standards. Based on this, the research makes it possible to broaden the debate not only on aspects involving the quality of

accounting information and its maximization, but also the discussion on the relevance of proxies to be used for the comparative analysis of enforcement between different countries and markets.

The results help to understand both the macroeconomic aspects that affect the quality of the accounting information reported, and, eventually, users of accounting information from companies traded in markets considered to be less rigorous in enforcement can pay attention to aspects of the quality of the accounting results of these companies and the relevance of this information, especially for the understanding and planning of these stakeholders in scenarios of greater uncertainty such as the global crisis of covid-19 in environments considered to have lower levels of supervision.

It is noteworthy that, although the research can serve as an evolutionary parameter of accounting conservatism for the companies under study, the research does not intend to analyze only the pandemic period and its pre- and post-crisis divergences, which is one of the limitations of the research. Therefore, it is suggested that future studies explore not only how these different levels of economic development and legal system can be affected in periods before and after the crisis resulting from the pandemic, encompassing the characteristics of the quality of accounting information and, more precisely, conservatism of the reported numbers during this confrontation.

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