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Effects of adopting IFRS 9 for the audit of financial instruments in non-financial companies

Efectos de la adopción de la NIIF 9 en la auditoría de instrumentos financieros en empresas no financieras

Efeitos da adoção do IFRS 9 sobre a auditoria dos instrumentos financeiros em empresas não financeiras

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Abstract

Objective: The aim of this study is to determine the effects of adopting IFRS 9 for the auditing of financial instruments in non-financial companies in Brazil.

Methodology: The empirical tests were based on the data obtained from 338 non-financial companies listed in the B3 (Stock Exchange) in the period from 2014 to 2021, that appeared in the financial statements and auditing reports on the CVM website. The statistical tests were conducted in two stages: i) a descriptive analysis, through a comparison of the number of references to financial instruments, including the reasons for any alteration of opinion in the pre- and post- IFRS 9 periods; and ii) hypothesis testing of research by means of logistic regression estimates.

Results: The results of the empirical tests revealed that the adoption of IFRS 9 is positively related to the references to financial instruments in the auditing reports, although they have not led to a rise in the number of altered opinions.

Contributions made by the study: The empirical evidence arising from the literature on the auditing of financial instruments makes it possible to determine how the introduction of new accounting standards has affected the process of auditing and enabled the regulators and users of the information to understand the possible outcomes of regulations on the audit procedures for financial instruments. In addition, the findings made clear what factors determine how the adoption of IFRS 9 has affected the audit reports and the work they involve. They fill a *gap* in the literature with regard to the direct bearing IFRS 9 has on non-financial entities, given the fact that previous studies have concentrated on other aspects of the auditing of financial instruments and almost always been concerned with financial institutions.

Keywords: IFRS 9; Financial Instruments; Auditing; Non-financial corporations.

Resumen

Objetivo: Este estudio tuvo como objetivo identificar los efectos de la adopción de la NIIF 9 en la auditoría de instrumentos financieros en empresas no financieras brasileñas.

Metodología: Las pruebas empíricas se basaron en datos de 338 empresas no financieras cotizadas en B3 para el período de 2014 a 2021, obtenidos directamente de los estados financieros e informes de auditoría, en el sitio web de la CVM. Las pruebas estadísticas comprendieron dos etapas: análisis descriptivo, comparando la proporción de menciones de instrumentos financieros, incluida la justificación del cambio de opinión, en los períodos anterior y posterior a la NIIF 9; y probar hipótesis de investigación mediante estimaciones de regresión *Logit*.

Resultados: Los resultados de las pruebas empíricas revelaron que la adopción de la NIIF 9 se relaciona positivamente con la mención de instrumentos financieros en los informes de auditoría, aunque no aumentó la propensión a modificar opiniones basadas en dichos elementos.

Contribuciones del Estudio: Las evidencias empíricas contribuyen a la literatura sobre la auditoría de instrumentos financieros, permitiendo identificar cómo la introducción de la nueva norma contable repercutió en el proceso de auditoría y possibilitando a los reguladores y usuarios de la información comprender los posibles efectos de la norma en la auditoría de instrumentos financieros. Además, los hallazgos revelan los factores que determinan cómo la adopción de la NIIF 9 afectó el trabajo y el informe del auditor. Esto cubre una brecha en la literatura con respecto al impacto directo del IFRS 9 en la auditoría de entidades no financieras, dado que estudios anteriores se han centrado en otros aspectos de la auditoría de instrumentos

financieros y casi siempre en instituciones financieras.

Palabras clave: NIIF 9. Instrumentos Financieros. Auditoría. Empresas no financieras.

Resumo

Objetivo: Este estudo teve por objetivo identificar os efeitos da adoção do IFRS 9 sobre a auditoria dos instrumentos financeiros nas empresas não financeiras brasileiras.

Metodologia: Os testes empíricos tiveram por base os dados de 338 empresas não financeiras listada da B3 relativos ao período de 2014 a 2021, obtidas diretamente nas demonstrações financeiras e relatórios de auditoria, no sítio da CVM. Os testes estatísticos compreenderam duas etapas: análise descritiva, mediante a comparação da proporção de menção a instrumentos financeiros, incluindo a justificativa para modificação de opinião, nos períodos pré e pós-IFRS 9; e teste das hipóteses de pesquisa por meio das estimações de regressões *Logit*.

Resultados: Os resultados dos testes empíricos revelaram que a adoção do IFRS 9 é positivamente relacionada com a menção a instrumentos financeiros nos relatórios de auditoria, embora não tenha aumentado a propensão à modificação de opinião com base em tais itens.

Contribuições do Estudo: As evidências empíricas contribuem com a literatura sobre a auditoria de instrumentos financeiros, permitem identificar como a introdução do novo padrão contábil repercutiu no processo de auditoria e possibilitam aos reguladores e usuários da informação compreenderem os possíveis efeitos da norma sobre a auditoria dos instrumentos financeiros. Adicionalmente, os achados revelam os fatores que determinam como a adoção do IFRS 9 afetou o trabalho e o relatório do auditor. Supre um *gap* da literatura a respeito do impacto direto do IFRS 9 na auditoria de entidades não financeiras, tendo em vista que estudos anteriores têm se concentrado em outros aspectos da auditoria de instrumentos financeiros e quase sempre concentrados em instituições financeiras.

Palavras-chave: IFRS 9. Instrumentos Financeiros. Auditoria. Empresas não financeiras.

1 Introduction

According to Albuquerque (2009), independent auditing entails ascertaining whether financial statements have been drawn up in compliance with accounting standards and principles, with a view to issuing an opinion about the reliability of the information. However, the role of the audit committee goes well beyond this, since it also has a social function which is to reduce information asymmetry and allow users to have access to more valuable information. This point is underlined by Borges (2008), who defines an opinion as an instrument of power that is able to influence the decision-making of the stakeholders. The International Standard on Auditing (ISA) 200 says that the purpose of external auditing is to build user trust in the financial statements issued by companies.

The increasing complexity of businesses and the internationalization of corporations operating in different countries with a wide range of subsidiaries and partnerships (as well as being involved in complex financial dealings) is reflected in the challenges that face accounting professionals. This means that independent auditors have to act with a greater degree of *expertise* to tackle any changing developments and ensure that the financial information is accurate and appropriate for decision-making. (Martin, 2002). One of the features that resulted

from the advances made in the companies were the financial instruments defined by the *International Financial Reporting Standards 9 – Financial Instruments* (IFRS 9) as any contract that gives rise to a financial asset for one party and a financial liability or equity instrument for the other party.

The IFRS 9 consists of a set of accounting standards issued by the *International Accounting Standards Board* (IASB) which establishes the guidelines for the recognition, measurement and disclosure of financial instruments. It came into force on January 1st, 2018, as a replacement for *International Accounting Standard 39* (IAS 39), with a view to simplifying accounting practices and improving measurement by making significant alterations to the accounting treatment of financial instruments and hence having a direct bearing on auditing.

Although IFRS 9 may have a greater significance for financial institutions because of its exposure to transactions involving financial instruments, non-financial companies are also directly affected by the standards and face considerable challenges. In particular, there is a need to adjust the measurements bases for assets and liabilities. As well as this, the standards lay emphasis on expected loss which makes it necessary for companies to adopt a more proactive approach in estimating credit losses. (ElKelish, 2021).

In light of this, the entities are finding that there is a need to carry out a more in-depth evaluation that is compatible with financial instruments. Gebhardt (2016) states that, although there has been a greater responsiveness in the accounting treatment of financial instruments, since the IFRS 9 established its guidelines for classification, recognition and measurement, the adoption of standards has required a greater degree of professional judgment. This is because as a result of the introduction of a model for expected losses, professional accounting is required to make more subjective estimates with the aim of assessing future losses. This can possibly lead to a results-based management approach which increases the risk of significant distortions in financial statements, with serious effects on auditing.

Thus, the auditing of financial instruments has become more challenging and complex. This is because according to the Practical Guide for Auditing Financial Instruments (IAPN-1000), susceptibility to management bias increases in proportion to the subjectivity of the assessment and the degree of uncertainty in the measurement and this requires skilled technical professionals and extra specialized knowledge to give a suitable assessment of the quality of the information disclosed by the companies. In addition, IFRS 9 has introduced new disclosure requirements which increases the responsibility of the auditor to ensure that the information disclosed is sufficient and accurate for the user of the financial statements.

Studies on the auditing of financial instruments have explored matters such as the following: challenges related to its complexity (Mendes, Niyama, & Silva, 2015) and the impact of the audit report, in particular as one of the Main Types of Auditing (Staub, Paulino, & Moraes, 2018; Marques, Pereira, Aquino, & Freitag, 2021; Makiuchi, Mendes, & Dantas, 2022), which is usually associated with the subjectivity of these instruments and the risk involved. With regard to the adoption of IFRS 9 in particular, ElKelish (2021), Chan and Phua (2022) and Gómez-Ortega, Gelashvili, Jalón and Menéndez (2022) have made a significant improvement in the transparency and quality of financial statements, as well as raising new challenges for the auditors. Taken together, these studies examine general factors concerning the auditing of financial statements, and underline the way auditing has evolved so that it now has a sharper focus which gives priority to the quality of information, while showing an increasing ability to adapt to regulatory requirements, especially with regard to financial instruments. As well as this, there is a natural concentration on the environment of the financial market.

Thus, while bearing in mind the challenges that surround the accounting methods of the financial instruments and the resulting difficulties arising from the auditing of these instruments, one is faced with the following research question: **how is the decision to adopt IFRS 9 reflected in the auditing procedures of financial instruments in financial companies?**

With regard to this, the aim of this study is to determine the effects of adopting IFRS 9 on the auditing of financial instruments for non-financial Brazilian companies. In effect, the audit reports of the financial statements of 338 non-financial Brazilian companies were analysed in the period from 2014 to 2021, and the references to financial instruments in the periods both before and after IFRS 9 came into force, either to explain any changes of opinion or respond to other significant questions.

Since financial instruments are widely used by corporations in funding activities and risk management, as well as being able to represent significant proportions of the business ownership structure, trust in related financial information is particularly important to understand the economic and financial situation of an entity. In light of this, the auditing of financial instruments is becoming an essential service both to ensure regulatory compliance and guarantee consistency in the financial information disclosed.

The contribution made by this study to this matter is to determine how the new accounting standards of financial instruments is affecting auditing procedures and the importance attached to the question in the audit reports. It fills a gap in the literature with regard to the direct impact of IFRS 9 on the auditing of non-financial entities, given the fact that previous studies have concentrated on other aspects of auditing financial instruments and almost always been concerned with financial institutions.

This study is structured in the following way: the review of the literature is carried out in Section 2 and this examines i) the main changes that have taken place from IAS 39 to IFRS 9, ii) previous studies and iii) the development of the research hypothesis. In Section 3, the methodological procedures are discussed and a research sample shown; there is also an examination of the parameters for the descriptive analysis and the models for the hypothesis testing. In Section 4, the results of the descriptive analysis are shown with regard to the references to financial instruments and changes of opinion about them, as well as the references (per section) of the audit report; and the pre-and post- IFRS 9 periods are compared. In addition, the hypotheses are tested, first with regard to the references to financial instruments and later to changes of opinion about the financial instruments. Finally, the conclusions of the study are summarized in Section 5.

2 Literature Review

2.1 Financial Instruments: changes from IAS 39 to IFRS 9

IAS 39 came into force on January 1st 2001 and represented a significant milestone in the international sphere for accounting operations which involve financial instruments. Among the main changes, can be cited the implementation of rules for the recognition, measurement and disclosure of financial instruments (Iudícibus, Lacanna, Pereira, Beuren, 2020).

According to Rosa (2022), two points were regarded as very important at that time: (i) the choice of the fair value method for the measurement of any assets and/or liabilities, (only on the basis of their purpose), with respective gains and losses being recognized in the results as being of an irrevocable condition when obtained from a first recognition; and (ii) the complexity of hedge accounting. With regard to fair value, two problematic questions can be

raised, namely: (a) the improper use of the fair value method, especially in what concerns the accounting of financial liabilities and (b) increased volatility in the results of entities. A further point regarding *hedge* accounting, its complexity has led to distortion in the classification of financial instruments.

Owing to the inherent complexity of IAS 39 and with the advent of the subprime crisis, Boscia, Dantas, Leone and Kimura (2022) stated that the drawing up of IFRS 9 was driven as a regulatory response, in so far as it sought to mitigate the procyclicality of the financial system. Not only this, Rocha (2020) highlighted the inefficiency of the standards with regard to the timeliness of measuring expected credit losses, which underlined the need for financial statements to be disclosed in a timely manner, together with the expected monetary value.

Soon afterwards, the IASB concentrated its efforts on revising the standards and following this, the IFRS 9 was drawn up. One of the main reasons for the regulatory changes was the discovery that the model for losses incurred was ineffective. This was owing to the fact that the recognition of losses only at the time they occur, allows the creation of hidden reserves which can be used to manage the financial outcome during situations of economic/financial crisis (Dantas, Micheletto, Cardoso & Freire, 2017). In view of this, it can be concluded that delaying the recognition of an impairment loss of financial assets, even when likely, has led to a distortion of accounting information.

A wide range of changes were caused by the implementation of IRFS 9. The accounting procedures, which in the light of IAS 39, were more rule-based when IFRS 9 first came into force, began to be underpinned by principles. This drew attention to the alteration of the criteria for the classification of the instruments, which ceased to be based on purpose and began to be based on the business model and contractual cash flow characteristics (Almeida, 2022; Lacanna, 2018). Furthermore, the enforceability of *impairment* foreseen in the IFRS 9, introduced the expected credit loss model, which replaced the incurred loss model established in IAS 39. This was a significant change brought about by the new standards because the expected credit loss model offers a perspective that is *forward looking*, while the incurred loss model reflects past events and is *backward looking* for the recognition of losses linked to a credit risk (Dantas et al, 2017). Finally, IFRS 9 addresses the question of *hedge* accounting on the basis of risk management in companies since this pertains more closely to principles than the system in IAS 39 (Ramalho, 2023).

With regard to the conceptual framework for financial reporting, Kvaal, Löw, Novotny-Farkas, Panaretou, Renders and Sampers (2023) state that the transition effects were limited because the fundamental changes can take some time to materialize. By focusing on non-financial companies, Henkel and Bürger (2020), examined German and Italian companies and found that more than 90% of the shares remained unaltered in their classification and measurement categories. In the case of the Italian companies, the authors stated there was some movement in the fair value measurement by means of the amortization schedule, while with regard to German companies, there was a migration of available-for-sale securities. Pinto and Morais (2022) investigated the classification of capital market instruments in the first year that IFRS 9 was adopted for companies, including in the FTSE 100 and EURO STOXX 50 indexes. The study found that about 65% of the available-for-sale instruments were classified as fair value by means of the comprehensive results after the adoption of IFRS 9, while the remaining 35% were classified as fair value by means of the financial outcome.

In summary, the introduction of IFRS 9 has revolutionized the accounting methods of financial instruments, and brought about significant changes. The classification procedures and measurement began to be based on the way these instruments are managed, as well as their risk profile. The new *impairment* model required the most powerful entities to assess credit risk.

Hedge accounting became more closely aligned with the companies´ risk management policies. Finally, the implementation of IFRS 9 led to the reduction of information asymmetry by providing the users with useful information about risks. Thus, studies on financial instruments are essential to understand how these new criteria have influenced the work of independent auditors in so far as they can ensure the reliability of financial information.

2.2 Auditing Financial Instruments

Studies on the auditing of financial instruments have usually investigated the impact they have on audit reports, particularly with regard to CAM [Critical Audit Matters], the subjectivity implicit in these instruments and the awareness of associated risks. The fact that research studies concentrate on this question in financial institutions is another feature linked to this literature.

Mendes et al. (2015) analysed how auditors viewed the fair value measurement of complex financial instruments (Level 3 of the Fair Value Hierarchy) in financial institutions with regard to aspects of significance, measurement and audit risk assessment. The arguments both in favour of and against *fair value* were raised in the study. On the one hand, its supporters claimed fair value accounting was more transparent and important whereas its opponents pointed to its greater complexity and lack of trustworthiness, since subjectivity makes it easier to tamper with accounting procedures. The authors conclude that it requires more solid training in finance and accounting estimates. Another factor that was noted was the failure to adopt internal supervision procedures since the review of working papers by more experienced professionals is indispensable. Finally, there were clear signs of a behavioural failure which was characterized by a lack of professional scepticism and inability to confront controversial and/or subjective questions.

Staub et al. (2018) analysed the independent audit reports of ´New Market´ companies with a view to determining which Key Audit Matters (KAMs) should be addressed. As a result, the subjects that were most often highlighted were as follows: (i) in the general analysis: revenue recognition and allowance, *impairment* of other assets, taxes and *impairment* of *goodwill*, and (ii) in companies for a segment of the New Market: technology, financial instruments and tax concessions. Although the focal point of this study was not specifically on financial instruments, these were one of the areas most often referred to in the audit reports like KAM.

The KAM were also one of the points addressed by Santana et al. (2019), who analysed the relationship between the main subjects cited such as the basis for a modified opinion, ´emphasis of matter´ paragraphs and the key audit matters (KAMs) in the auditing of banking institutions in Brazil. The study was carried out from three different standpoints: (i) modified opinion versus emphasis, (ii) emphasis versus KAM, and (iii) modified opinion versus KAM. From the perspective of financial instruments, the outcomes suggested that the Loan Loss Provisions (LLP) and fair value of financial instruments, were only cited in the KAM. Moreover, it was confirmed that the LLP was the subject that recurred most in the KAM and that questions like the fair value of financial instruments do not appear as a basis for a modified opinion.

The objective of the study by Marques et al. (2021) is to determine the effect of adopting ISA 701 on the readability of the independent audit reports. The results confirm that the most widely reported KAM were the reduction in the recoverable amount, contingencies and provisions, the recognition of regulatory assets and liabilities, financial instruments, and deferred tax assets, which represented 69% of the total of KAM disclosed by the companies in

the sample that was analysed. On another occasion, the instruments were revealed to be one of the main subjects addressed in the audit reports.

Makiuchi et al. (2022) confirmed the importance of financial derivatives for the main Brazilian financial institutions and the references to these instruments in the independent audit reports. The research is grounded on the complexity of the financial instruments, in particular, the derivatives, as well as the subjectivity that is inherent in fair value measurement - a fact that increases the risk of significant distortion of information for the auditing. The outcome suggested that there were very few references to derivatives or financial assets at fair value in the audit reports and that from 2016 onwards, there was a rise in the number of references to financial derivatives which coincided with the New Audit Report (NAR), when the KAM began to be given prominence.

ElKelish (2021) analysed the relationship between the quality of the information and the stock returns at the time when the pre-adoption of IFRS 9 was being announced. The research study drew attention to the link between the quality of the financial information and the auditing standards. The introduction of IFRS 9 had a bearing on the improvement of transparency and reporting quality of the balance sheets which can, in turn, instil a greater feeling of trust among auditors in the reliability of the information presented. As well as this, the new standards raised additional challenges for the auditors, who had to be well informed and prepared to deal with the accounting procedures. These included i) a stricter assessment of the risks incurred when involved with financial instruments and ii) checking that they were in compliance with the new guidelines.

Chan and Phua (2022) studied the differences between the periods before and after the adoption of IFRS 9 in the companies listed in Malaysia. The study revealed that external audit quality has a significant effect on the conditional conservatism patterns of companies. More specifically, the results show that companies audited by high-quality audits have a greater degree of accounting conservatism after the adoption of IFRS 9. This moderating effect suggests that audit quality plays an essential role in ensuring that companies comply with the new accounting standards, by fostering more conservative accounting practices. In addition, further analyses have strengthened the belief that the presence of high quality audits boosts the influence of IFRS 9 on conditional conservatism. This implies that high quality auditors are more diligent in conforming to standards and detecting any possible bias in company financial reports.

Gómez-Ortega et al. (2022) investigated the effects of applying IFRS 9 in the credit institutions listed in Spain, with a focus on the regulatory implications of supervision and auditing. The evidence showed that IFRS 9 had a significant influence on the work of the auditors and required a more in-depth understanding of the credit risk and proportional hazard assumptions involved. In light of this, the auditors found it necessary to make a critical assessment of the methodologies and data employed by the financial institutions, to estimate the expected credit losses.

The reviewed studies attached great importance to the financial instruments in the audit reports and the need for an enhanced professional judgment to deal with the subjectivity and complexity of these assets. The adoption of IFRS 9 added to the urgency and required auditors not only to have a sound training in finance and accounting practices but also a heightened degree of professional scepticism. The frequent appearance of CAM in relation to financial instruments in the audit reports underlined the continued importance of this matter. To sum up, the evolution of accounting standards and auditing continues to be a challenge for professionals when seeking to maintain high standards of accuracy, transparency and professional judgment.

2.3 Development of the research hypothesis

Two research hypotheses have been formulated to test the potential effects of this new accounting standard on the auditing of the instruments involved. This was in accord with the empirical findings that highlight the complexity and challenges arising from the auditing of financial instruments (ElKelish, 2021; Gómez-Ortega et al., 2022; Makiuchi et al., 2022; Mendes et al., 2015; Santana et al., 2019; Staub et al., 2018). These are outlined in Section 2.2, together with the way the prospect of this subjectivity is strengthened through the adoption of IFRS 9, and in particular the expected credit loss model. Moreover, these standards are essential to ensure the integrity and trustworthiness of the information disclosed by the companies.

The first hypothesis sets out from the assumption that the degree of uncertainty about the estimate is directly related to significant distortions of accounting estimates (IAPN-1000, 2016). On the basis of the evidence provided by Makiuchi et al. (2022), it is not only the complexity of the financial instruments and their inherent subjectivity that increase the risk of significant distortion for auditing. The following hypothesis that must be tested empirically, is formulated as a result of the increase of the inherent subjectivity in IFRS 9, notably with regard to the recognition of losses related to credit risk and professional judgment:

H_1: **The adoption of IFRS 9 has increased the number of references to financial instruments in the audit reports on the balance sheets of non-financial Brazilian companies.**

In addition, in view of the fact that a) businesses can show bias in their professional judgments, owing to a rise in subjective assessment and a greater degree of measurement uncertainty, and b) this can lead to possible outcome-based management practices (IAPN-1000, 2016; Gebhardt, 2016), the second hypothesis can be formulated as follows:

H_2: **The adoption of IFRS 9 has increased the proportion of reports with a modified opinion (linked to financial instruments) about the balance sheets of non-financial Brazilian companies.**

3 Methodological Procedures

In describing the methodological procedures for carrying out the empirical tests of the research hypotheses, the following areas are addressed in this section: the sample and data source, the parameters used for the descriptive analysis of the data and the models for testing the ***H_1*** and ***H_2*** hypotheses.

3.1 Sample and Data Source

The research sample comprises 338 non-financial companies listed in the B3 Stock Exchange - industrial goods, construction and transport sectors, cyclical and non-cyclical consumption, basic materials, petrol, gas and bio combustibles, information technology, telecommunications, public utilities and others. Financial institutions were excluded on account of the fact that the financial instruments in these entities represent the actual nature of the activities, which can skew the analyses and conclusions. In addition, the requirements of IFRS 9 have still not been adopted in the regulatory accounting of the financial system, even though they came into effect through the full adoption of Resolution CMN nº 4.966, from 2021 to the beginning of 2025.

The website of the Securities and Exchange Commission (SEC) was used as the source for data collection in the Internet. This obtained the data about audit opinions, whether or not there were any references to financial instruments (and if so, in what section). Data were collected over a period of eight years and this represented a potential sample of 2,704 audit reports. The sampling period also lasted for eight years (2014-21) – four years for the adoption of IFRS 9 (2014 a 2017), which for the purposes of analysis will be defined as the pre-IFRS 9 period, and four following years for the adoption of the new standards (2018-2021), designated as post-IFRS 9.

3.2 Parameters of Descriptive Data Analysis

The first stage of the tests consisted of the descriptive data analysis and involved comparing the references or the modified opinions according to the financial instruments in the audit reports. These were divided into two blocks - pre-IFRS 9, the period between 2014 and 2017; and post-IFRS 9, which included the reports on the financial balance sheets between 2018 and 2021. On the basis of these parameters, it was possible to determine the first signs of the possible effects of adopting IFRS 9 in what was written in the audit reports.

This descriptive analysis took account of matters related to i) the temporal evolution of the references to financial instruments, ii) the modified opinions caused by problems related to these matters and iii) the section in the audit report where there is a citation about these instruments.

3.3 Models for Testing the Hypotheses

Two logistic regression models were designed to determine the effects of adopting IFRS 9 in non-financial Brazilian companies a) in the references to financial instruments and b) to modified opinions - (3.1) and (3.2), respectively, while taking note of how variables that are independent of the possible factors that can influence the position taken by the auditors.

$$RAif_{it} = \beta_0 + \beta_1 IFRS9_t + \beta_2 B4_{it} + \beta_3 B4_{it} * IFRS9_t + \sum sectors_i + \varepsilon_{it} \quad (3.1)$$

$$MODif_{it} = \beta_0 + \beta_1 IFRS9_t + \beta_2 B4_{it} + \beta_3 B4_{it} * IFRS9_t + \sum sectors_i + \varepsilon_{it} \quad (3.2)$$

Whereby:

RAif$_{it}$: indicates the references to financial instruments in the audit report of Company i, in the períod t, assuming 1 when there is a reference and 0 when there is not.

MODif$_{it}$: indicates the modified opinion resulting from the references to financial instruments in the audit report of Company i, in the period t, assuming 1 when there is a modified opinion and 0 when there is not.

IFRS9$_t$: represents the period when IFRS 9 is in force, in period t, assuming 1 for the financial balance sheets since the year 2018.

B4$_{it}$: represents Company i audited by a firm that belongs to the *big four* audit firms in the period t, assuming 1 when it is one of the *big four* and 0 if not the case.

Sectors $_i$: shows which economic sector Company i belongs to, assuming 1 when t belongs to the sector under consideration and 0 when not the case. The following sectors are included: industrial goods (***Bind***), construction and transport (***C&T***), cyclical consumption (***CC***), non-cyclical consumption (***CNC***), basic materials (***MatBas***), petrol, gas and

biocombustibles (***PG&B***), information technology (***TI***), telecommunications (***Telec***), public utilities (***UtPub***) and others (***outros***).

The model is estimated to test the research hypothesis H_1, (3.1), which is the expected positive relation between the variable of interest (***IFRS9***) and the dependent variable (***RAif***), which suggests that there was an increase in the number of references to financial instruments in the audit reports following the adoption of new accounting standards for these instruments. This can be explained by the increase in the subjectivity inherent in IFRS 9, notably with regard to the recognition of losses related to credit risk and professional judgment, as made clear in Section 2.3.

In what concerns the representative variable of the large audit firms – the *big four* (***B4***) – it is expected that these are more likely to refer to financial instruments in their reports, since they have a more in-depth technical knowledge with regard to accounting standards (Ramalho, 2018), which allows a more comprehensive understanding of financial instruments (Hakim & Omri, 2009), and can thus enables them to make a more effective assessment. In summary, it can be assumed that large audit forms invest more in research and development, as well as issuing guidelines and making interpretations of complex accounting issues, including financial instruments, which can explain their greater capacity to have a clear position with regard to these instruments.

The purpose of the interaction variable ***B4*IFRS9*** is to determine whether the auditing carried out by the *big four* in the period when IFRS 9 was in force, explains why it is probable that the financial instruments will be referred to in the audit reports. As has already been pointed out, IFRS 9 is accompanied by a high degree of subjectivity and since the *big four* are holders of technical knowledge, as well as sophisticated tools and methodologies, it is possible that the auditing carried out by these firms in the period when the new standards were in force, were more likely to refer to financial instruments.

With regard to the economic sectors, it can be plausibly argued that these were also evolved in the references to financial instruments in the audit reports, when account is taken of the nature of the activity, the risks involved, the specific way the sector was regulated and the possible economic effects of the financial instruments. In view of this, it is expected that the sectors that will more probably incur risks - like the energy sector, which makes use of financial instruments as protective devices (Martins & Mendonça, 2016) – are more likely to refer to financial instruments, given the fact that IFRS 9 regulates *hedge accounting*.

In this case, hypothesis H_2 is used as a reference-point for the model (3.2). The expected results are the same as those that appeared for the first model, as much for the variable of interest which is representative of the new accounting standards ***(IFRS9)*** in force, as for the control variables. The change is only that in this second model, the dependent variable is what determines the modified opinion resulting from the financial instruments ***(MODif)***.

Notwithstanding the fact that complexity may be an inherent feature of the financial instruments of IFRS 9, its prerogative is to simplify accounting procedures and establish the criteria needed for classification, measurement and disclosure. However, the increase of subjectivity arising from the requirements of accounting estimates and their possible effects on the outcomes of the entities, can affect the opinions of the auditor.

4 Results and Analyses

4.1 Descriptive Analysis

Table 1 provides a detailed analysis of the relationship between the references to financial instruments in the audit reports and the number of modified opinions related to these instruments. For this purpose, these ratios are calculated for each year and for the pre and post-IFRS 9 periods. In addition, the proportional number of reports that show a modified opinion as a result of the references to financial instruments is also analysed, while taking note of the frequency rates per year and per period. This analysis makes it possible to examine if there were any changes in the frequency of references to financial instruments, following the advent of IFRS 9, as well as to determine how these affected the opinions of the auditors.

Table 1
Proportional number of references and modified opinions with regard to the financial instruments.

Period	Year	Nº of reports	Financial Instruments in the Audit Report					
			References			Modified Opinion		
			Qtd	% year	% period	Qtd	% year	% period
Pre-IFRS 9	2014	317	20	6.31%	20.26%	10	3.15%	2.98%
	2015	307	24	7.82%		9	2.93%	
	2016	294	102	34.69%		9	3.06%	
	2017	291	99	24.02%		8	2.75%	
Post-IFRS 9	2018	279	89	31.90%	24.60%	6	2.15%	2.14%
	2019	271	64	23.62%		5	2.21%	
	2020	265	59	22.26%		5	1.88%	
	2021	258	52	20.15%		7	2.71%	
Test for the difference of means								
Statistical t-test					-2.4875***			0.4860
t critical value					1.6455			16455
p-value					0.0065			0.3135

Level of significance: 1% ***, 5% ** e 10% *
Source: *research data.*

These data show that at first there was a rise in the number of references to financial instruments from 2016, the year that the largest proportion (34.69%) was reached within the period analysed. When the pre and post-IFRS 9 periods were contrasted, it was found that there was an increase of 4.34 percentage points in the references to financial instruments after the adoption of IFRS 9. This difference between the two periods is statistically significant as it indicates that hypothesis $\boldsymbol{H_1}$ has been corroborated or in other words, that after IFRS 9 came into force, there was a rise in the number of references to financial instruments in the audit reports.

At the same time, the proportional number of modified opinions remained relatively stable throughout this period, with small fluctuations. Within the period being analysed, the largest proportion (3.06%) was attained in 2016 and the lowest (1.88%) in 2020. When the pre

and post-IFRS 9 periods were contrasted, a negative variation was noted of 0.84 percentage points in the number of modified opinions. This suggests that, although the proportional number of references to financial instruments had increased after IFRS 9 came into force, the rate of modified opinions with regard to financial instruments, remained stable, with a slight tendency to fall. The difference in means test revealed a lack of any statistical significance between the periods, which indicates that there was no corroboration of hypothesis H_2.

Following this, a comparative analysis was conducted of references to financial instruments (by section) in the audit reports both before and after the introduction of IFRS 9, and this provides a comprehensive view of the occurrence of references to financial instruments in these reports. It can be divided as follows:

a) Basis of an audit opinion: in this section, it is noted that the auditing was carried out in compliance with the systematic guidelines for auditing, with a stress on the responsibilities of auditors. These not only encompass the standards of independence for auditors of listed entities but also certifies that the auditing evidence gathered while the work is being carried out, is sufficient and appropriate to form the basis of an opinion (ISA 700).
b) Key Audit Matters (KAM): this section outlines the matters that, in the professional judgment of the auditor, were most important when undertaking the work for the current period. It also gives the reason why this subject was deemed to be a KAM and describes how it was dealt with in the auditing (ISA 701).
c) Emphasis-of-Matter Paragraphs: in this paragraph, those subjects are highlighted that the auditor feels, as a part of his professional judgment, are essential to ensure users have a full understanding of information about financial statements, notwithstanding the fact that this has been duly outlined or disclosed in the balance sheets (ISA 706).
d) Operational continuity: since the balance sheets are based on the assumption of operational business continuity, the section entitled: “Relevant uncertainty with regard to operational continuity” is included in the report when there is uncertainty about the operational continuity of an entity, even though its disclosure was appropriate. In this case, there is no modified opinion and the auditor draws attention to the explanatory note which lists the main events or conditions that cause uncertainty, as well as the management strategy to deal with these circumstances (ISA 570).
e) Other-Matter Paragraphs: this paragraph addresses all the subjects that are not included or disclosed in the balance sheets but which, in the professional judgment of the auditor, are essential to enable users to understand auditing and the responsibilities of the auditors or their reports (ISA 706).

This analysis is outlined in Table 2, where it is clear what types of approaches are adopted by the auditors in what concerns financial instruments; as well as this, it is determined whether there were changes in the standards established when investigating the pre and post-IFRS 9 periods.

Table 2:
A comparative analysis of references to financial instruments (by section) in the audit reports - pre- and post IFRS 9 period

Period	Nº of reports	Section	References to Financial Instruments	
			Nº of reports	%
Pre-IFRS 9	1.209	Basis for an Opinion	26	2.15%
		KAM	184	15.22%
		Emphasis	46	3.80%

		Operational continuity	-	-
		Other subjects	-	-
		There is no reference	964	79.73%
Post-IFRS 9	1.073	Basis for na Opinion	20	1.86%
		KAM	225	20.97%
		Emphasis	21	1.96%
		Operational continuity	3	0.28%
		Other subjects	-	-
		There is no mention	809	75.40%

Source: *research data.*

The tabulated data corroborate the information supplied in Table 1 that there was a rise in the proportional number of references to financial instruments which was to the detriment of the duration of IFRS 9. It should also be noted that the largest percentage increase in references to financial instruments is in the section on KAM where there was an increase of 5.75 percentage points. On the other hand, the number of references in the Basis of an Audit Opinion and Emphasis-of-matter sections declined proportionally, which represents the first signs that the research hypothesis H_2, could be refuted.

One point that is worth stressing is that the financial instruments are referred to in the operational continuity section in three reports in the post-IFRS 9 period. These occurrences involve the following companies and subjects: (i) Oi S.A., in the telecommunications sector, which addresses how to enforce the restrictive covenants placed on loans and extra funding, such as the legal preconditions for ensuring operational continuity; (ii) Metalúrgica Iguaçu S.A., from the basic materials sector which is concerned with the renegotiation of commercial contracts and loan deadline extensions, when they are described as insufficient to ensure operational continuity; and (iii) Karsten S.A., of the consumer cyclical sector, which is concerned with debentures that involve the risk of a company´s operational continuity if its management has not been successful in the renegotiation of debts.

4.2 Research Hypothesis Tests

Logistic regression estimates (logit) were used for testing the research hypothesis (3.1) and (3.2). The binary choice logistic models make it possible to calculate the probability distribution for variables of interest. It should be stressed that according to Figueira (2006), a logistic regression does not directly estimate the values of the dependent variable but rather, the probability of occurrence of one of the values assumed by the dependent variable.

The results, in turn, will be analysed in two blocks: (i) with regard to the references to financial instruments in the audit report, where an attempt is made to determine which of the variables under consideration, explains the occurrences of references to financial instruments and (ii) with regard to the modified opinions resulting from the financial instruments and considering the same variables, there will be an analysis of what factors explain the occurrence of modified opinions resulting from financial instruments.

4.2.1 Concerning the References to Financial Instruments in the Audit Report

The estimation model (3.1) seeks to determine which of the variables under consideration, can explain the occurrence of references to financial instruments in the audit reports. The incorporation of control variables related to the economic sector, was carried out

by means of the *stepwise* technique and is ultimately restricted to those that show a statistical significance. The results of the estimation are given in Table 3. At first, it was pointed out that the ´notion of verisimilitude´ test (Likelihood Ratio Test Statistic) was employed to measure the model setting, which confirmed the presence of statistically significant variables. In addition, the pseudo R^2 of McFadeen demonstrated that the model (3.1) can explain 5.27% of the references to financial instruments.

Table 3

Estimation of the linear regression model for determining the frequency of references to financial instruments in the audit reports – pre and post IFRS 9

Model:

$$RAif_{it} = \beta_0 + \beta_1 IFRS9_t + \beta_2 B4_{it} + \beta_3 B4_{it} * IFRS9_t + \sum sectors_i + \varepsilon_{it}$$

	Coefficient	Odds ratio	Standard Error	Stat z	p-value
Const	-0.8350***	0.4339	0.1210	-6.9022	0.0000
IFRS9	0.3136**	1.3683	0.1520	2.0635	0.0391
B4	-0.9363***	0.3921	0.1488	-6.2927	0.0000
*B4*IFRS9*	-0.2773	0.7578	0.2090	-1.3269	0.1845
CC	0.2526*	1.2874	0.1318	1.9169	0.0553
CNC	0.3044*	1.3559	0.1660	1.8341	0.0666
IT	-0.7774**	0.4596	0.3697	-2.1028	0.0355

Nº observations:	2282	R^2 McFadden	0.0527
RAif = 0	1773	LR Statistic	127.6355
RAif = 1	509	p-value (LR)	0.0000

Whereby: ***RAif*** indicates the references to financial instruments in the audit reports; ***IFRS9*** indicates the implementation of the new ruling; ***B4*** variable which represents the group of the *big four;* ***B4*IFRS9*** variable of interaction seeks to determine if the auditing carried out by the *big four* explains the references to financial instruments; ***Sectors*** variable which represents the economic sector which the company belongs to ; CC represents the companies that belong to the consumer cyclical sector; CNC represents the companies that belong to the consumer non-cyclical sector; IT represents the companies that belong to the Information Technology sector.

Level of significance: *** 1%, ** 5%, * 10%.

Source: *research data.*

The estimation results revealed that the ***IFRS9*** variable had a positive relation and was statistically significant with the dependent variable ***RAif.*** This shows that, when the referred ruling was implemented, the audit reports in the period were more likely to cite financial instruments. The *odds ratio* showed that an audit report issued when IFRS 9 was in force, increased the chance of referring to financial instruments by 36.83%. One of the probable reasons for this behaviour is that IFRS 9 introduced the concept of expected loss for the recognition of *impairment,* which is corroborated by the study of Santana et al. (2019), where LLP is cited as the most frequently recurring subject in the KAM. In addition, it should be noted that the references which deal with the derivative instruments and *hedge* accounting, correspond to only 16.69% of the references to financial instruments. Thus, the rise in the number of

references in the period analysed, may not be subject to the growth in the use of derivative instruments, especially for hedge purposes. These findings corroborate the research hypothesis of ***H1*** that the adoption of IFRS 9 increased the likelihood of references to financial instruments being present in the audit report.

The findings with regard to variable ***B4*** show a negative relation to the dependent variable ***RAif***, and revealed that an audit report issued by one of the forms belonging to the *big four,* reduced the likelihood of financial instruments being mentioned by 60.79%. This result can be interpreted in two ways: the first is that the large auditing firms pay less attention to financial instruments; and the second is that the *big four* make stringent requirements when selecting low-risk customers, which would explain the fact that financial instruments are less likely to be mentioned (Santos, Guimarães, Dantas, 2022). In the case of the interaction variable (***B4*IFRS9)***, the lack of statistical significance shows that the link between the *big four* auditors and references to financial instruments, did not change after IFRS 9 came into force.

With regard to the control of sectors, the estimation results revealed that the consumer cyclical companies (***CC***) and non-cyclical companies (***CNC***) have a positive relation and are statistically significant with the dependent variable ***RAif***. This confirms that entities that belong to this sector are more likely to have references to financial instruments in their audit reports. The fact of belonging to the consumer cyclical sector increases the chance of having references to financial instruments by 28.74%, while in the case of the non-cyclical sector, it is 35.59%. The information technology sector (***IT***), in turn, showed a negative relation and was statistically significant with a dependent variable, which suggests that companies that belong to this sector are less likely to include references to financial instruments by their auditors. The *odds ratio* showed that belonging to this sector reduces the chance of financial instruments being mentioned by 54.04%.

4.2.2 How Modified Opinions Result from Financial Instruments

The purpose of the estimation model (3.2) was to analyse the effects of IFRS 9 on the modified opinions arising from financial instruments. By means of the ratio test for verisimilitude (LR Statistic) the presence of statistically significant variables was confirmed. The pseudo R^2 de McFadeen revealed that 13.7% of the observations can be explained by the model. As in the previous section, the *stepwise* technique was employed to integrate the control variables related to the economic sector, while being restricted to those that had a statistical significance. The estimation results have 2,282 observations and are displayed in Table 4.

Table 4

Estimation of the linear regression model for determining the modified opinions resulting from the financial instruments – pre and post IFRS 9

Model:

$$MODif_{it} = \beta_0 + \beta_1 IFRS9_t + \beta_2 B4_{it} + \beta_3 B4_{it} * IFRS9_t + \sum sectors_i + \varepsilon_{it}$$

	Coefficient	Odds ratio	Standard Error	Stat z	p-value
Const	-3.4459***	0.0319	0.3123	-11.0337	0.0000
IFRS9	-0.3710	0.6901	0.3421	-1.0843	0.2783
B4	-2.1224***	0.1197	0.4738	-4.4799	0.0000
B4*IFRS9	-0.0441	0.9569	0.7883	-0.0559	0.9554

CT	1.5052***	4.5049	0.3554	4.2349	0.0000
CC	0.8051**	2.2368	0.3961	2.0323	0.0421

Nº of observations:	2282	R^2 McFadden	0.1370
MODif = 0	2236	LR Statistic	61.6764
MODif = 1	46	p-value (LR)	0.0000

Whereby: ***MODif*** indicates the modified opinions in the audit reports resulting from the financial instruments ; ***IFRS9*** indicates the implementation of the new ruling; ***B4*** is the variable that represents the group of the *big four;* ***B4*IFRS9*** is the interaction variable that seeks to determine if the auditing carried out by the *big four* can explain the references to financial instruments; ***Sectors*** is the variable that represents the economic sector which the company belongs to; ***CT*** represents the sector of construction and transport companies; ***CC*** represents the companies in the consumer cyclical sector.

Level of significance: *** 1%, ** 5%, * 10%.

Source: *research data.*

The estimation findings provide evidence that the ***IFRS9*** variable does not have a significant statistical relationship with the dependent variable ***MODif***. This shows that the modified opinions arising from the financial instruments did not alter because of the implementation of the new ruling. This result suggests that, although there is an increase of subjectivity owing to the accounting estimate requirements and the professional judgment involved in the classification, measurement and disclosure of the financial instruments, IFRS 9 met the expectation to simplify the accounting procedures of the financial instruments. These findings refute the H_2 research hypothesis that the adoption of IFRS 9 will make it more likely that modified opinions will arise from the financial instruments.

The ***B4*** variable showed a negative relation with the ***MODif*** variable, since the *odds-ratio* shows that an audit report issued by one of the firms belonging to the *big four* reduces the chance of having a modified opinion as a result of financial instruments, by 88.03%. One possible explanation of this result is that these firms possess *expertise* and specialist skills (Ramalho, 2018; Hakim & Omri, 2009) which enable them to mitigate the risks incurred in the auditing of financial instruments and that being aware of the reputation of the *big four*, the audited companies carry out the task of tackling the problems found while engaged in their work. Another possible explanation is that since the large auditing firms are anxious to maintain their reputation in the market, they tend to make a rigorous selection of their clients which entails looking out for companies that are financially sound, while steering clear of those with financial difficulties, even though these are more liable to have modified opinions (Santos et al., 2022). As well as this, it should be stressed that the firms that belong to the *big four* correspond to 42.67% of the references to financial instruments in the KAM section for the post-IFRS 9 period, which corroborates the statistical insignificance of the group with regard to modified opinions arising from financial instruments. The interaction variable (***B4*IFRS9***), in turn, did not have statistical significance, like the previous model, which underlines the fact that the implementation of IFRS 9 did not alter the behaviour of the *big four* with regard to financial instruments.

As regards the control of the sectors, the estimation results revealed that both construction and transport companies (***CT***) and the consumer cyclical companies (***CC***) had a positive relationship and were statistically significant with the dependent variable ***MODif***. These results confirm that the entities belonging to these sectors are more likely to have a modified opinion arising from the financial instruments. The fact that they belonged to the construction and transport sectors increased the chance of a modified opinion arising from the

financial instruments by 4.5 times, while in the case of the consumer cyclical sector, it was 2.24 times.

5 Conclusion

The purpose of this study was to determine the effects of adopting IFRS 9 on the auditing of financial instruments in non-financial Brazilian companies. It was based on the premise that the increase of subjectivity that was implicit in the accounting standards, would increase (i) the references to financial instruments in the audit reports and (ii) the likelihood of opinions being modified on the basis of these instruments.

The results of the empirical tests which were carried out both from the descriptive analysis, together with the mean difference test and by means of the logistic regression model, revealed that the adoption of IFRS 9, is closely related to the number of references to financial instruments in the audit reports, although on the basis of the financial instruments, a modified opinion was not more likely. On the other hand, the trend towards adopting new accounting standards is not enough to modify the opinions that emerge from matters related to financial instruments. In summary, there was corroboration of the H1 research hypothesis which foresaw an increase in the number of references to financial instruments in the audit reports, after IFRS 9 was implemented. Moreover, this refuted H2, which was based on the premise that the increase in the proportional number of modified opinions from the auditing, was the outcome of the adoption of new accounting standards relative to the financial instruments.

Other findings of the study revealed that: (i) in the section on KAM, there was a more significant increase in the references to instruments between the periods before and after IFRS 9; (ii) the auditing carried out by the *big four* reduced the chance both of references to financial instruments in the audit reports and to modified opinions about this subject; (iii) the references to financial instruments in the audit reports are more frequent in the auditing carried out in the balance sheets of companies that belonged to the consumer cyclical and non-cyclical sectors and were less common in the information technology sector; and (iv) the modified opinions related to financial instruments are more common in the financial statements of the construction and transport sectors, as well as the consumer cyclical sector.

In our view, our study has made a research contribution to the literature on the question of the auditing of financial instruments, by offering a more comprehensive view of how the introduction of IFRS 9 has had repercussions on auditing procedures and on the importance attached to this matter in the audit reports on the financial statements of Brazilian non-financial entities. It thus fills a gap in the literature on the auditing of financial instruments which are constantly being concentrated on the world of financial institutions. The empirical evidence makes it possible to determine how the introduction of new accounting standards has shaken up auditing procedures and enabled the regulators and users of the information to understand the effects of the standards on the auditing of financial instruments.

Studies of this kind are innovative in the way they explore the reactions to the adoption of new accounting standards in auditing procedures, given the fact that there are several studies that assess the impact of accounting standards from the perspective of the users of the information, in particular investors. Finally, the findings reveal factors that determine how the adoption of IFRS 9 has affected the audit reports and work of the auditors.

One of the work´s limitations is that it is confined to non-financial Brazilian companies listed in the Stock Exchange. Thus, it is recommended that future research studies should broaden the horizon of the inquiry by addressing entities in other countries, so as to assess whether the adoption of IFRS 9 has had similar repercussions on the auditing of financial

instruments. Moreover, since the market always reacts to anything that is new, another possible line of research is to analyse if there was an increase of references when the standards were in force and whether or not this occurred as a result of the inherent complexity of the subject or if it is now being applied with all the regulatory requirements in place.

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