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The relationship between the introduction of key audit matters and the audit delay in Brazil

Relação entre a introdução dos principais assuntos de auditoria e o audit delay no Brasil

Relación entre la introducción de los principales asuntos de auditoría y el *audit delay* en Brasil

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Abstract
This study investigated the relationship between the introduction of Key Audit Matters (KAM) section and the delay of audit reports in Brazil. The data from 122 Brazilian corporations in 2015, the last year without the new section, and 2016, the first year with it, were analysed. The Kolmogorov–Smirnov (KS) test and the Wilcoxon signal test were employed to detect changes in the cumulative distribution of the audit delay and its medians. The study also performed an econometric evaluation using a difference-in-difference (*dif-in-dif*) estimator. The results of the tests rejected the research hypothesis, suggesting a reduction in the audit delay in companies whose reports contained a KAM section in 2016. This work contributes to filling a gap in the Brazilian empirical literature by documenting the effects of KAM on the audit delay in addition to discussing the consequence of the new section on financial statements. From a theoretical perspective, the control of audit firms' inputs was revealed to be essential for the presentation of a definitive answer on the impacts of the introduction of the KAM section on the quality of audit services, particularly the audit delay.
Keywords: Audit delay; Auditing; Key audit matters; Critical audit matters

Resumo
Este estudo investigou a relação entre a introdução da seção principais assuntos de auditoria (PAA) e o *audit delay* dos relatórios de auditoria no Brasil. Foram analisados os dados de 122 companhias brasileiras em 2015 e 2016, primeiro ano da implementação dos PAA no país. O teste de Kolmogorov-Smirnov (KS) e o teste de sinais de Wilcoxon foram utilizados para detectar mudanças na distribuição acumulada do *audit delay* e em suas medianas. Também foi realizada avaliação econométrica empregando um estimador de diferença-em-diferenças (*dif-in-dif*). Os resultados dos testes rejeitaram a hipótese de pesquisa, sugerindo uma redução no *audit delay* nas empresas cujos relatórios continham seção PAA em 2016. Este trabalho preenche uma lacuna na literatura empírica nacional e documenta a relação entre o PAA e o *audit delay* no país, além de oferecer percepções sobre as consequências do relatório de auditoria independente sobre as demonstrações financeiras. Sob uma perspectiva teórica, o controle de insumos das firmas de auditoria se mostrou essencial para a apresentação de uma resposta definitiva sobre os impactos da introdução da seção PAA na qualidade dos serviços de auditoria, em particular, o *audit delay*.
Palavras-chave: Auditoria; *Audit delay*; Demora da Auditoria; Principais Assuntos de Auditoria

Resumen
Este estudio investigó la relación entre la introducción de los Principales Asuntos de Auditoría (PAA) y el retraso en la auditoría de los informes de auditoría en Brasil. Se analizaron datos de 122 empresas

brasileñas en 2015 y 2016, primer año de la nueva sección. Se utilizaron el test de Kolmogorov-Smirnov (KS) y el test de señal de Wilcoxon para detectar cambios en la distribución acumulada del retardo de auditoría y sus medianas. El estudio realizó una evaluación econométrica utilizando un estimador de diferencias en diferencias. Los resultados de las pruebas rechazaron la hipótesis de investigación, sugiriendo una reducción en la demora de auditoría en empresas cuyos informes contenían una sección de PAA en 2016. Este trabajo contribuye a llenar un vacío en la literatura brasileña empírica y documentar los efectos de la PAA en la demora de auditoría y proporcionar discusiones acerca la nueva sección en los estados financieros. Desde una perspectiva teórica, el control de los insumos de las firmas de auditoría resultó fundamental para la presentación de una respuesta definitiva sobre los impactos de la introducción del apartado PAA sobre la calidad de los servicios de auditoría, en particular, el retraso en la auditoría.
Palabras clave: Auditoría; *Audit delay*; Retraso en la auditoría; Principales asuntos de auditoria

1 Introduction

The adoption of a new structure in the independent audit report on financial statements based on the publication of a set of professional standards – such as the Brazilian Accounting Standards for Audit Techniques (NBC TA) in Brazil – was a milestone in the accounting assurance services in the second decade of this millennium.[i] Apart from the reordering of parts of the auditor's report, the changes included, in particular, the introduction of a section entitled Key Audit Matters, henceforth KAM, and was called *Principais Assuntos de Auditoria* in Brazilian Portuguese.

With the objective of reducing informational asymmetry between auditors and users of financial statements, the KAM section emerged in Brazil from the edition of NBC TA 701. As well as its international analogue – the International Standard on Auditing (ISA) 701 – the Brazilian technical standard requires independent auditors to identify the matters that need significant attention when carrying out the audit, among those discussed with the audit committee of the audited entity, and the communication of these matters in a separate section (Conselho Federal de Contabilidade [CFC], 2016).

Similar sections have been adopted in auditors' reports in other countries. The so-called Critical Audit Matters (CAM) in the United States of America, Key Audit Matters (KAM) in the United Kingdom and Ireland and Justification des Appréciation (JDA) in France have structures and objectives similar to those described in NBC TA 701. Despite the positive effects that the introduction of this new section could bring (e.g., Cordoş & Fülöp, 2015), some studies have argued that it could have relevant negative impacts on the quality of the auditor's report or the audit fees (Sirois, Bédard, & Bera, 2014; Bédard, Gonthier-Besacier, & Schatt, 2019). Additionally, Sirois, Bédard and Bera (2014) highlighted the possibility that the new section could draw users' attention away from the rest of the financial statements; further, Christensen, Glover and Wolfe (2014) warned that the new section could reduce the investment of non-professional users. Some authors also advocated that the introduction of the KAM section would increase the risk of legal liability of audit firms in cases of bankruptcy or fraud in the audited companies (Gimbar, Hansen, & Ozlanski, 2016; Brasel, Doxey, Grenier, & Reffett, 2016) with consequent effects on audit fees. Likewise, the Public Company Accounting Oversight Board (PCAOB, 2013) warned of the risk of an increase in the number of days required to publish financial statements.

In Brazil, even with the later adoption of KAM in 2016, studies have already been conducted on the subject. Among the highlights are Marques and Souza`s (2017) paper, which observed a greater amount of KAM in large companies; Cruz, Nardi, Figueira, and Silva`s (2019) paper which did not identify predefined standards by audit firms in their reports; and Mello, Araújo and Luca`s (2021) paper which found no relevant variation in audit fees after the adoption of the KAM section. All of them have an optimistic view of the introduction of the new section would suggest.

Although the obligation of KAM in Brazil was restricted in 2016 to listed companies, in accordance with the National Monetary Council`s (CMN) Resolution 4,720 of 2019, the KAM section became mandatory in the audit reports of large financial institutions as well. Those large financial institutions were framed in segments S1, S2 and S3 by the CMN`s Resolution 4,553, and carried the risk of an increase in the audit delay and consequent expansion at the time of publication or dissemination of their financial statements.

Although Cruz et al. (2019) did not find significant results for the relationship between the audit delay and the number of topics treated as key audit matters in the new section, a question that remains to be verified is whether the mere presentation of the new section changed the audit delay in 2016, the first year of publication. If the introduction of a similar section reduces this audit delay, as documented in the French case (Bédard et al., 2019) and contrary to what was expected by the PCAOB`s (2013) arguments, it would be interesting to investigate and document the Brazilian case. Thus, this paper seeks to fill a gap in the literature by exploring a market with particular characteristics, that is, the Brazilian market, and by creating expectations about the impact of KAM adoption for audits carried out in 2020 in financial institutions upon the publication of the CMN`s Resolution 4,720.

In this context, the present study was conducted to verify the relationship between the introduction of the KAM section and the delay of audit reports of Brazilian public companies. To achieve this goal, statistical

analyses were carried out using a sample of 122 Brazilian companies from different sectors, focusing on the audit delay variable defined as the time between the end of the fiscal period and the date of signing the report (measured in days), as given by Ashton, Willingham, and Elliot (1987) and Ng and Tai (1994).

The first examination comprised of non-parametric tests, particularly an evaluation of the cumulative distribution of audit delay statistics of the sampled companies through the Kolmogorov–Smirnov (KS) test, which is usually adopted to assess the normality of a distribution. Additionally, the Wilcoxon sign test was performed to measure the medians of the audit delay. In both tests, the first year of publication of the KAM section, that is, 2016, was compared with the immediately preceding period, that is, 2015. In addition to the non-parametric tests, an econometric evaluation was carried out to control some of the variables that potentially impact the audit delay and thereby measure the effect of the introduction of the new section with a difference-in-difference (*dif-in-dif*) estimator applied to the constructed panel.

The results refuted the hypothesis that the introduction of the KAM section had a negative impact on the audit delay, that is, an increase in the number of days to sign the report of the audited companies. In line with the result of the French case (Bédard et al., 2019), the analyses suggested that the auditors, when preparing their financial statement assurance reports, finalised their processes in a timely manner even after the implementation of the new section.

The study is essentially empirical and measures the effects of the new section on audit delays in Brazil, aiming to assure market and professional regulators that the improvement of the final product of the auditors' work did not result in negative time-based consequences in issuing the audit report. Although previous studies have examined the relationship between audit delay and the adoption of similar sections in other countries, none was found in the context of the Brazilian market.

Additionally, the study provides a basis for evaluating the introduction of the KAM section in financial institutions, which were not yet reached by the new requirement to publish a KAM section given previously only to listed companies. Banks and other financial institutions supervised by the Central Bank of Brazil become obliged to the publication of KAM only after the mentioned CMN`s Resolution 4,720. Finally, the atypical application of the KS test in the context of KAM can serve as a methodological contribution to other studies of this kind.

From a theoretical point of view, following Copley, Gaver and Gaver (1995), assessing the determinants of an audit's results, whether in terms of timely delivery, as is the case in this study, or the resulting fees, requires considering both the supply and the demand side of the audit market. In this sense, to the extent that the introduction of the new section – imposed by the regulator – represents an increase in audit services, an assessment of the resulting new balance would necessarily require the simultaneous consideration of elements of the supply side. Therefore, it was not possible to conclusively determine the occurrence of workforce displacement within audit firms towards engagements that require the new section; accordingly, this remains a conjecture for further evaluations towards an explanation for observed audit delay reduction.

This paper is structured into five sections, beginning with this introduction, which presents a brief contextualisation of the subject, the identification of the objective and a discussion about the study's relevance and contributions. The second section is dedicated to reviewing the literature on the timeliness attribute and the audit delay in addition to discussing the introduction of KAM in Brazil and other countries. Following this, the third section presents the methodological procedures developed to carry out the empirical tests, while the fourth describes and analyses the main results obtained. The article ends with a presentation of the conclusions and suggestions for future studies.

2 Theoretical Framework

This section presents a brief review of the theoretical framework and fundamental concepts applied in the paper, focusing on the audit delay and its relationship with the main audit subjects.

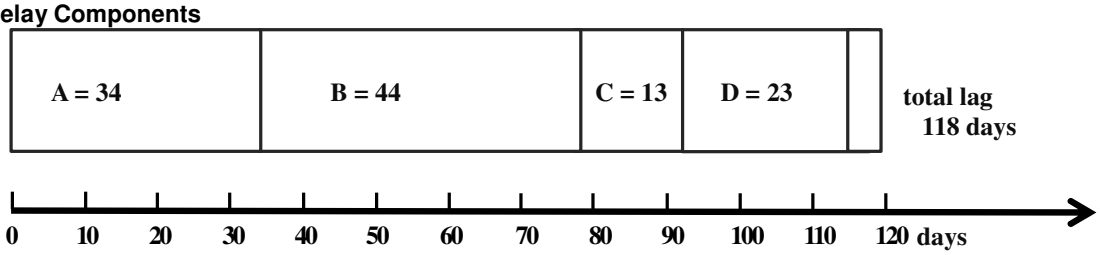
2.1 Audit Delay

Considered by Abbott, Parker, and Peters (2012) as the main determinant of the timeliness criterion of a financial statement, the audit delay has already been associated with the risk of internal control failures, adoption of mistaken accounting policies and errors in financial statements (Kinney Jr & McDaniel, 1993). Although the determinants of the audit delay are still under discussion, there seems to be a consensus on the idea that a publication beyond the legal deadline provides a negative signal to the market, possibly in a manner similar to the qualification of opinion (Blankley, Hurtt, & MacGregor, 2015).

Dyer IV and McHugh (1975) were among the first to structure the assurance process from the end of the fiscal period to the publication of the audited financial statements. Based on the deadline for submitting the financial statements and responses to the questionnaires sent to audited companies and audit firms, the authors constructed the audit delay time structure replicated in Figure 1. The time structure subdivides the total lag into four components, namely A, B, C and D, plus the period for sending the report by mail (no letter assigned), which was a common practice at the time the study was carried out. Component A represents the

number of days until the auditor can audit at least 90% of the balance sheet accounts; B, the number of days between the end of period A and submission of the report to the audit committee; C, the number of days between sending the report to the committee and receiving a feedback for adjustments, including the time for negotiations with the client; and D, the number of days to issue the final report.

Figure 1
Audit Delay Components



Note: Adapted from Dyer IV & McHugh (1975, p.210)

In the present contemporary times, audit delay components can be structured differently or have other values. In early 2021, at the time this study was conducted, the authors did not know of a single country that required financial statements to be sent by post. Associated with the technological advances observed since the elaboration of the study by Dyer IV and McHugh (1975), the performance of control tests during the fiscal year and the shortening of the time required for the submission of financial reports imposed by some regulators resulted in a significant reduction in the total lag (Bryant-Kutcher, Peng, & Weber, 2013). In 2003, for example, the Securities and Exchange Commission (SEC) reduced the deadline for submitting financial reports for some firms, usually large ones called large accelerated fillers. Since 2006, the maximum deadline for submitting statements for companies in this category in the US has been 60 days.

The empirical literature is useful in discriminating audit delay determinants and revealing the significance of some observable variables. Abernathy, Barnes, Stefaniak, and Weisbarth (2017) carried out an extensive literature review and highlighted the fact that the specificities of both the auditing firm and audited corporation are important factors that should be included in empirical assessments. Further, it seems evident that not only the individual entities but also the relationship between the audit firm and the audited corporation are relevant in the assurance process. Braunbeck (2010), for example, associated the audit delay with the independence of the auditor's firm, since the delay would be related to the negotiation between the auditors and their client about adjustments to the financial statements.

As a characteristic variable of audited companies, a measure widely applied in the empirical literature is the corporation size, usually represented by total assets. Market studies in Australia (Dyer IV & McHugh, 1975), the USA (Givoly & Palmon, 1982), Canada (Ashton, Willingtam, & Elliott, 1987), Hong Kong (Ng & Tai, 1994), France (Khoufi & Khoufi, 2018) and Spain (Bonsón-Ponte, Escobar-Rodríguez, & Borrero-Dominguez, 2008) revealed almost unanimous results stating that larger companies have shorter audit delays. As large corporations have access to more resources and better control systems, they can produce more reliable and timely accounting reports. The results of studies that investigate variables associated with internal control structures or audit committees tend to support the argument about corporation size (Ashton et al., 1987; Abbott, Parker, & Peters, 2012; Pizzini, Lin, & Ziegenfuss, 2015).

Another relevant feature of the audit delay is the specificity of the sector in which the audited company operates. Ashton et al. (1987) pointed to the existence of stricter controls in financial institutions, subject to specific regulations in different jurisdictions, and it is common to find banks among the first in financial statement disclosure schedules.

Regarding the characteristics associated with auditing firms or the auditor's report itself, the literature also points to the importance of qualified opinions, with "clean" reports presenting shorter audit delay than others (Whittred, 1980; Ashton et al., 1987; Begley & Fischer, 1998; Haw, Qi, & Wu, 2000).

For listed companies in Brazil, Pereira and Costa (2012) found associations between qualified opinions and greater audit delay. In the same direction, Ramos and Cunha (2015) concluded that firms with structured audit committees and with a more sophisticated level of governance, that is, members of the so-called New Market (Novo Mercado), exhibited shorter audit delay but did not corroborate the proposed hypothesis that the rotation of audit firms have a significant effect on the audit delay.

The current study continues to explore the characteristics of the new section required in the auditors' report and presents the results of the main empirical works that evaluated the impact of the introduction of the KAM section, with a focus on the audit delay, laying the basis for the formulation of the research hypothesis.

2.2 Key Audit Matters and their Relationship to Audit Delay

Among the recent changes promoted by the International Auditing and Assurance Standards Board (IAASB) in audit reports, the issuance of the ISA 701 stands out due to changes in the format and content of the audit report to produce a more informative document. Several countries made modifications to their audit reports by adopting sections such as the KAM even before the publication of ISA 701. The variations between the sections adopted in different countries are small, and they can all be considered relevant in the context of audit reports (Kiss, Fülöp, & Cordoş, 2015; PCAOB, 2017).

JDA, a section analogous to KAM, was adopted in the audit reports of large companies in France since 2006 (Haut Conseil du Commissariat aux Comptes [H3C], 2006). Bédard, Gonthier-Besacier and Schatt (2019) evaluated the costs and benefits of the JDA, and their results suggested that the introduction of the section did not significantly impact the number of days required for publication, auditors' fees, or audit quality measured by accruals in an earnings management model. Viewed in nominal terms, the number of days taken to publish audit reports even reduced with the introduction of the JDA section.

In the US, the CAM section was initially proposed by the PCAOB in 2013, being considered the most significant element of the new standard recommended for the audit report with unqualified opinion (PCAOB, 2013, p.A7-1). Briefly, CAM includes the matters that require significant judgment from the auditor to be evaluated or the areas that show greater difficulty in evaluating or obtaining evidence during the audit process. Despite the explicit objective of improving the information provided by the auditors, the PCAOB did not fail to consider the negative aspects related to CAM, which would require additional efforts in the audit process. Thus, there was a fear that the introduction of the CAM section would generate the need for additional time for the final review of communications, implying a reduction in the period available for the auditor to complete his report (PCAOB, 2013). Among the known empirical evaluations, Gimbar, Hansen and Ozlanski (2016) studied the effects of the adoption of CAM in the US, and their conclusions suggested a low possibility of contingency liabilities on auditors with the introduction of the new section.

In Brazil, the approval of NBC TA 701 for listed companies occurred in June 2016, taking effect from the 2016 fiscal year. Some regulators, such as the Brazilian Securities Commission (CVM) and the CMN, only commented on the matter after that year. CVM Instruction 591, which imposes the communication of the new section in the audit reports of financial statements of all entities regulated or supervised by the CVM (i.e. public companies), was published in October 2017 (CVM, 2017). The mandatory submission of the KAM section for investment funds only occurred in 2019 (CVM, 2019), the same year in which the CMN introduced the requirement to publish the new section, effective from 2020, in the audit reports of financial institutions of segments S1, S2 and S3, in addition to those institutions that, even outside these three segments, are public companies.[ii]

Although these changes are recent, some empirical assessments of the Brazilian case have already been published. Silva, Bianchi and Venturini (2018), for example, examined the statements of firms in the electricity sector and found at least one KAM in all audited companies. When analysing a sample of 49 companies listed in the Brazilian stock exchange B3, Marques and Souza (2017) synthesised the main subjects selected as KAM, noting among other results that most reports contained two to four KAMs, with the recoverability of assets, contingencies and revenue recognition being the most discussed topics. The authors observed specificities for entities in the financial sector, a result endorsed by Santana, Silva, Dantas, and Botelho (2019).

Cruz et al. (2019) examined the relationship between the content of the new audit report and the profile of audited companies and audit firms. After examining the audit report of 346 companies listed on the Brazilian stock exchange for the 2016 fiscal year – the first year of the new audit report with the KAM section – the authors did not observe predefined standards by the audit firms in their reports, resulting in an optimistic view about the results of the adoption of the new section. Of particular interest to this paper, they did not find significant results for the relationship between the audit delay and the number of topics considered in the section KAM.

Moreover, the studies by Camargo, Rodrigues, Machado and Guerra (2019), Alves and Galdi (2020) and Mello et al. (2021) stand out. Camargos et al.'s (2019) paper found KAM sections with more words in companies that showed losses compared to those that showed profits, suggesting that there is informative value with the new section. The event study by Alves and Galdi (2020) considered an event window of three days including the release date and found abnormal returns for publishing statements in the first year of the adoption of the new section. Finally, Mello et al.'s (2021) study did not detect an impact on auditors' fees after the introduction of the KAM section. However, none of the cited studies evaluated the effects of the new section on audit delay.

Since audit delay refers to the delivery time of the audit service, the introduction of a new section in the audit report can be understood as an additional demand on the audit service. Because of the imposition of the ceteris paribus condition, some incremental effect on the audit delay could be expected. With the same effort, the introduction of an additional task in the service would imply an increase in the time required for its execution. Clearly, this result confronts the idea that the new service required with the introduction of the KAM section would only be a small additional effort to disclose a new item in the auditor's report, which

does not impact the number of hours consumed in the audit (Reid, Carcello, Li & Neal, 2019; Mello, Araújo & Luca, 2021).

Nevertheless, the aspect of the ceteris paribus condition is reinforced here because, without it, a null net result on the audit delay could happen even if the new section not only generated a small additional effort but also burdened the auditors' costs in a material way. For example, if the production of the new section increased the number of working hours of the auditors, included a greater proportion of senior auditors (i.e., partners or managers) in the engagement, or generated a greater provision of ancillary services (Knechel & Payne, 2001), the reports with the KAM section could be produced even with a reduction in the audit delay. Alternatively, the increase in client risk, if the introduction of the KAM section was perceived as such, could be internalised with lower auditors' profit margins. Accordingly, the result on the prices charged or the quality of the service offered would rely on a simultaneous assessment of demand and supply factors, as reinforced by Copley et al. (1995). Analysing only one of the curves that comprises the audit market resulted in a failure to provide correct measures on the shifts between equilibria. In this sense, some of the evaluated studies that explore the audit delay, including this one, which do not control elements of the two agents that make up the audit market, should be viewed with reservation.

In summary, the evidence from the Brazilian empirical literature seems to be in line with the international literature, which suggests a positive effect with the introduction of KAM, although doubts remain about its relevance on the perceived quality of the auditors' reports. Nonetheless, the importance of timeliness of financial statements prompts a formal assessment of the introduction of the new section on the audit delay for the Brazilian case, despite the assessment difficulties mentioned above. Cruz et al. (2019) evaluated the number of subjects and their relationship with the audit delay but did not observe any increases before and after the introduction of the new section. In this direction and in addition to the cited paper, the following research hypothesis was formulated and empirically tested:

Research hypothesis: The introduction of the KAM section is associated with an increase in the audit delay of audit reports of Brazilian public companies.

From the point of view of audit firms, in addition to the time required for the identification and description of KAM, more time for discussions with the audited corporation appears necessary, especially considering any apprehension by the latter regarding possible repercussions associated with the dissemination of KAM. From the previously mentioned microeconomic perspective, the introduction of the KAM section in 2016 would imply, if the 2015 equilibrium conditions were kept constant, an increase in audit fees or a reduction in the final quality of the service, which is perceived here as the audit delay. Thus, it is reasonable to assume that the introduction of the new section adds a task to the audit process and, therefore, increases the time required to complete the entire audit process.

3 Methodology

The analysis of the formulated hypothesis was based on statistical and econometric tools, which were selected based on the availability of collected information. These procedures and the data used are discussed in this section.

3.1 Data Source and Variables

To carry out the empirical tests, data were collected from 122 entities and their financial statements for the fiscal years 2015 and 2016. All the documents were extracted directly from each corporation's website or from B3. In the absence of information in a corporation's financial statement, the Standardized Financial Statement (DFP) required by CVM was used. Besides the date of signature of the independent auditor's report in each document, the data presented in Table 1 were obtained.

The sample includes companies listed on B3 and belonging to the Bovespa index as well as unlisted privately held companies. A formal sampling process was not followed, resulting in a convenience sample, including companies that published and did not publish a KAM section in their audit reports in the 2016 financial statements.

After the sample collection process started with data from companies in the Bovespa index in July 2019, with public quotations in 2015, the sample was expanded with data from banking institutions in the country, captured in descending order of total assets. Although the sample was non-random and, therefore, did not allow inferences from the results on the population of Brazilian companies, it was satisfactory for the assessment of the impacts of the KAM section on the audit delay.

Table 1
Description of the Variables Considered in the Study

Variable	*Description*	*Source*
ADL	Number of days between the end of the fiscal period and the day the auditor's report is signed.	Independent auditors report
KAM	Dummy to identify entities that presented the KAM section in the reports of independent auditors in fiscal year 2016. KAM = 1 if the company's report contained KAM in 2016, and 0 otherwise.	Independent auditors report
YEAR	Dummy for the first year that listed companies became required to publish audit reports with the KAM section. YEAR = 0 for fiscal year 2015, and 1 for 2016.	Independent auditors report
LNAT	Natural logarithm of the total value of assets, in billions reais, of the audited corporation.	Financial Statements
GC	Dummy for a company belonging to B3's corporate governance group. *GC* = 1 if audited corporation belongs to level 1, level 2 or B3's new market, and 0 otherwise.	B3
IBOV	Dummy for a company belonging to the Bovespa index. *IBOV* = 1 if the shares of the audited corporation belong to the Bovespa index, and 0 otherwise.	B3
FIN	Dummy for a company belonging to the financial sector. *FIN* = 1 if the audited corporation is in the financial sector, and 0 otherwise.	B3
OQ	Dummy for the presence of qualified opinion or abstention of opinion. *OQ* = 1 if the auditor's report opinion is qualified (i.e., qualified or adverse) or there is a disclaimer of opinion, and 0 otherwise (i.e., the opinion is unqualified or "clean").	Independent auditors report
BIG4	Dummy for audit firms belonging to the group called Big 4 (*BIG4* = 1), consisting of Deloitte, EY, KPMG and PwC. *BIG4* = 0 otherwise.	Independent auditors report

A brief statistical summary of the data collected is presented in Table 2.

Table 2
Descriptive Statistics of Variables

Variable	*Measure*	*Obs.*	*Mean*	*Std Dev*	*Min*	*Max*
ADL	*Number of days*	244	82.080	95.020	21.00	814.00
KAM	*binary - dummy*	244	0.664*	0.473	0.00	1.00
YEAR	*binary - dummy*	244	0.500*	0.501	0.00	1.00
LNAT	*log. natural of BRL (million)*	244	16.730	1.460	14.33	21.06
GC	*binary - dummy*	244	0.541*	0.499	0.00	1.00
FIN	*binary - dummy*	244	0.516*	0.501	0.00	1.00
IBOV	*binary - dummy*	244	0.361*	0.481	0.00	1.00
OQ	*binary - dummy*	244	0.098*	0.298	0.00	1.00
BIG4	*binary - dummy*	244	0.967*	0.178	0.00	1.00

*Caption: * represents the percentage of responses equal to 1.*

In total, data from 122 companies was considered, 81 of which presented the new section in their independent audit reports in 2016. Distributions by sample subgroup are shown in Table 3.

Table 3
Frequency in the Sample by Subgroup

		Banks	*Other segments*	*Overall*
Without KAM in 2016	Listed	4	2	6
	Unlisted	33	2	35
	Total	*37*	*4*	*41*
With KAM in 2016	Listed	17	55	72
	Unlisted	9	0	9
	Total	*26*	*55*	*81*
Total		*63*	*59*	*122*

Overall, 78 companies were listed, and 44 were unlisted; 63 were banks, and 59 companies were from other sectors. Among the 81 companies that presented the KAM section in their 2016 fiscal year independent audit reports, 72 were listed, 17 were from the financial sector and 55 were from other sectors. Out of the 63 banks present in the sample, 37 of them did not present the new section in their independent audit reports. The complete list of companies included in the sample is presented in the Appendix.

3.2 Methods

The main research statistic is the *ADL*, which expresses the audit delay and is the focus of this study. It is used as a dependent variable in econometric estimations. As highlighted in Table 1, the audit delay is defined as the number of days between the end of the fiscal period and the date of signature of the auditors' report, as in Ashton et al. (1987) and Ng and Tai (1994).

Although pertinent criticisms exist about the use of the number of days as a proxy to assess the determinants of audit delay, the metric is still the most used in this task (e.g., Davies & Whittred, 1980; Ashton et al., 1987; Ng & Tai, 1994; Abbott et al., 2012). Its availability, as opposed to alternative metrics such as time spent exclusively performing the audit (i.e., excluding audit process negotiation time), has made its use popular. Further, there is reasonable evidence that a large part of the total publication time of a financial statement is due to the audit delay (Abbott et al., 2012).

The sample guided the applied statistical methods. Mainly because the number of statements and audited companies in the sample was small, this study used non-parametric tests in its evaluations. Endorsing this decision, there appears to be a pattern of non-normality in audit delay statistics, with previously reported positive skewed distribution (e.g., Dyer IV & McHugh, 1975; Davies & Whittred, 1980; Whittred, 1980).

The first test was aimed at comparing the results of the accumulated *ADL* distributions in 2015 and 2016. In accordance with the proposed hypothesis, different *ADL* distributions were expected for companies that contained KAM sections in 2016, compared to distributions of the same sub-sample for the previous year, that is, 2015, when there was no KAM requirement. For the subsample of companies that did not publish the KAM section, the distributions for the year 2016 must be the same as for 2015. The test used was the *KS*, which is usually employed in accounting literature to judge the normality of the distribution of a random variable. Here, the distributions accumulated in one year were compared against the other for each subsample.

Formally, *ADL* was considered a random variable, and its cumulative distribution function is $F(ADL)$:

$$F(ADL) = \mathrm{P}(ADL \leq adl)$$

where *adl* is a set of possible values for *ADL* and $F(ADL)$ is the probability that *ADL* takes on a value less than or equal to *adl*. The empirical cumulative distribution of a sample of *n* observations can be represented as

$$F_n(adl) = P_n(ADL \leq adl) = \frac{1}{n}\sum_{i=1}^{n} I(ADL_i \leq adl)$$

where *I* is an indicator that is equal to 1 when $ADL_i \leq adl$, and 0 otherwise. The *KS* test statistic of two samples *X* and *Y* (e.g., *X* = 2015 and *Y* = 2016) is given by

$$KS_{X,Y} = max_{adl}\left|F_{Y,n}(adl) - F_{X,n}(adl)\right|$$

where $KS_{X,Y}$ must equal zero if both empirical distributions are equal. In this test, the null and alternative hypotheses were constructed as follows:

$$H_0: F_X(adl) = F_Y(adl), \forall\ adl \in DL,$$

$$H_1: F_X(adl) \neq F_Y(adl), for\ any\ adl \in DL,$$

The values calculated for the $KS_{X,Y}$ statistic were compared with critical values obtained in Gibbons and Chakraborti (2011) and corrected by the software algorithm used, that is, Stata 14. To confirm the research hypothesis, a rejection of H_0 was expected for the subsample of companies that published KAM, in the sense that the introduction of KAM would increase the audit delay, but not for those that did not publish the new section.

In addition to observing the distributions accumulated before and after the release of the KAM section and evaluating their differences for the subsamples constructed, the analysis proceeded with the second test of this study, focusing directly on the centrality of the distributions. As the audit delay of the same company in two subsequent years implies dependence or pairing of samples, a signal test was used in this task.[iii]

The test used established that the distribution of a random variable *D* has a median equal to zero and, for this work, $D = ADL_Y - ADL_X$ represented the median of the difference of the distributions of two samples *X* and *Y*. In the same way as in the previous test, the period preceding the KAM publication requirement, that is, 2015, was used along with the first year in which such requirement was made, that is, 2016. Thus, *X* = 2015, and *Y* = 2016. As a benefit of its application, the test made no further assumptions about distributions. The statistic for the test is the N_+ number of differences *D* greater than zero. Assuming that the probability of a difference *D* is equal to zero, then, under the null hypothesis N_+ has a binomial distribution with parameters *n* and *p*, where *n* is the total number of observations and $p = ½$, that is, H_0: $N_+ \sim$

b(n = 122, p = ½), with the alternative hypothesis that N_+ does not have a binomial distribution with the parameters n and p. Similar to what was adopted with the *KS* test, rejection of H_0 was expected for the subsample of companies that published KAM in 2016 but not for those companies that did not publish the new section that year.

Despite the restrictions derived from the sample size, such as the imposition of degrees of freedom below those usual in studies of this nature, an econometric evaluation was also considered. A third test was chosen to be applied in the study with the model of *dif-in-dif*, possible with the data available for the two periods. The benefit of this modelling involved the ability to control factors associated with the audit delay that were not associated, by assumption, with the presentation of the KAM section in the independent auditor's reports but influenced the *ADL* and were treated more appropriately with a multivariate method.

Among the independent variables, the noteworthy one is the introduction of the KAM section, which occurred in 2016. To capture this effect, the *dif-in-dif* estimator *YEAR*KAM* was used, representing an interaction variable constructed by the multiplication of *YEAR* with KAM. Based on this variable and others described below, the equation to be used in evaluating the research hypothesis can be written as follows:

$$\ln(ADL_{i,t}) = \beta_0 + \beta_1 YEAR_t + \beta_2 KAM_i + \beta_3 (YEAR * KAM)_{i,t} + X'\delta + \varepsilon_{i,t} \quad (1)$$

where the dependent variable *ADL* is considered in its natural logarithm; *YEAR*, *KAM* and *YEAR*KAM* are variables described above; X' is a vector of control explanatory variables; δ is a vector of parameters to be estimated; ε is the random error term, and the subscripts stand for each audited corporation i and year t, respectively. The parameter of interest is β_3, which must have a positive sign to corroborate the research hypothesis.

The estimations were performed using the ordinary least squares method, pooling the data (POLS), and also with the random effects (RE) and fixed effects (FE) estimators for panel data.Given that the companies that issued KAM (*KAM* = 1) are entities usually listed in B3 and not belonging to the financial sector, a selection bias must be present by construction. To mitigate part of the effects on the *ADL* variable that would be present in the estimated errors, the control variables commented below and previously described in Table 1 were used.

The *LNAT* variable is usually associated with the size of the audited corporation and has shown robust results in previous research (e.g., Dyer IV & McHugh, 1975; Givoly & Palmon, 1982; Ashton et al., 1987; Ng & Tai, 1994), which induce the expectation of a negative parameter for the variable parameter, since larger companies tend to have bigger and better systems of control and access to resources. As present and well-organised corporate governance structures tend to have shorter audit delays (e.g., Abbott et al., 2012; Pizzini et al., 2015; Ramos & Cunha, 2015), parameters with negative signs were expected for the *CG*, *IBOV* and *FIN* variables, all associated with better-established corporate governance and firms under stronger regulation, in the case of financial institutions. As for the qualification of the opinion, the literature shows that clean reports tend to have shorter audit delays (Pereira & Costa, 2012). Thus, a negative parameter was expected for the *OQ* variable.

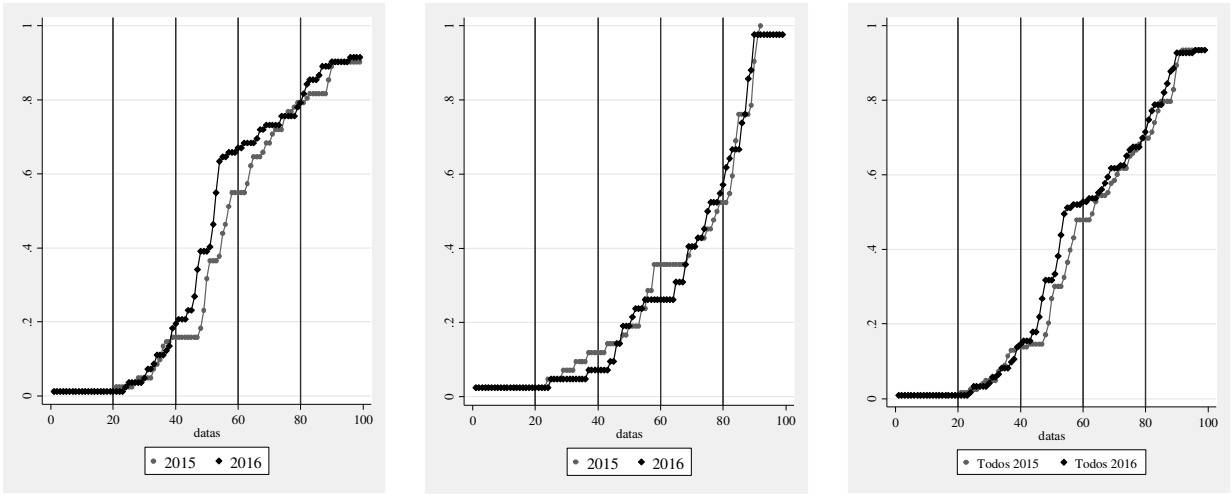
In relation to the *BIG4* dummy, if belonging to this category can reduce audit delays since firms in this group have a greater technological, operational and staff structure to carry out audits in a shorter time (Newton & Ashton, 1989; Ettredge, Li, & Sun, 2006), it is reasonable to assume that the same firms have the power to include more topics in the KAM section, resulting in greater delays in signing the audit report. This counterargument can justify the results presented by Durand (2018), who did not find any significance in 29 of the 40 studies analysed that included the dummy variables Big4, Big5 or Big8 in estimations on the audit delay. Despite the opposite effects mentioned above, a negative parameter of dummy *BIG4* was expected, signifying a shorter audit delay for entities audited by firms belonging to the group.

To check the potential presence of multicollinearity in the regressions, the econometric analysis was preceded by an evaluation of the Pearson correlation coefficients between the variables used, considering their equivalence to the point-biserial correlation. Given the characteristics of the sample, the usual normality tests were ignored. Likewise, no outliers were removed from the data because delays, particularly audit delays greater than the legal limit that characterise these outliers, were of interest to the research. Finally, the judgment between the FE or RE models was performed using the Hausman test, with the null hypothesis that the difference between the models' coefficients was not systematic and whose rejection aligned favourably to the FE model.

4 Results

The analysis of the proposed research hypothesis began with generating a cumulative distribution of the audit delays, which showed little variation between 2015 and 2016. The visual examination of the cumulative frequencies in Figure 2 shows the first indication of rejection of the hypothesis. The audit delay did not increase for the sub-sample of companies that published the KAM section (Figure 2a), and it was also shorter in 2016. The same conclusion seems adhering to the full data (Figure 2c). For companies

without the new section (Figure 2b), the results suggest the maintenance or small expansion of the audit delay.



(a) With KAM in 2016 (b) Without KAM in 2016 (c) Both subsamples

Figure 2 - Cumulative Distribution of Audit Delays in Brazil for 2015 and 2016

To assess the significance of these suggestions obtained from the graphical analysis, *KS* tests were performed in the subsamples, the results of which are summarised in Table 4. At the significance level of 10%, the results of the *KS* tests rejected the equality of the cumulative distributions for the subsample of companies with KAM (p = 0.008) and for the total sample (p = 0.054). These data refute the research hypothesis and, on the contrary, they endorse the idea that the introduction of the new section was associated with a significantly shorter audit delay (at 10% level), without a relevant difference from companies without a KAM section in their reports.

Table 4
Kolmogorov-Smirnov Test Results for Subsamples

	Observations	*KS stats*	*p-value (exact)*
With KAM in 2016	81	0.2593	0.008
Without KAM in 2016	41	0.0976	0.991
Both subsamples	122	0.1721	0.054

Null hypothesis for all lines*:* $F_{2015}(adl) = F_{2016}(adl)$

Although the analysis presented appears conclusive, only the accumulated differences of the audit delays were compared and not the centralities of the distributions. In this task, the mean values of the subsamples, as shown in Table 5, are illustrative and support the results of the tests so far. The sample data revealed a decrease in the audit delay for the subgroup that started to have a KAM section in 2016 but an increase for the subgroup that did not have KAM, going from 71.2 to 75.6 days. As a speculative inference, there may have been a displacement of the workforce, within audit firms, from conventional engagements to those in which KAM was required. This conjecture was less evident by observing the medians, which showed a decrease in 2016 for all subgroups. In any case, the analysis of central tendency measures was found to reinforce the perspective of graphical analysis and the *KS* test to refute the research hypothesis, that is, the incorporation of the KAM section in the audit report did not increase the audit delay – on the contrary, there was evidence to the opposite.

Table 5
ADL Variable Statistics for Periods and Subsamples

		Number of days - 2015				*Number of days - 2016*			
	Obs	*Mean*	*Median*	*Min*	*Max*	*Mean*	*Median*	*Min*	*Max*
With KAM in 2016	81	97.88	57	21	814	75.09	53	24	656
Without KAM in 2016	41	71.24	79	24	92	75.63	76	25	241
Both subsamples	122	88.89	64	21	814	75.27	55	24	656

For the second test, a formal examination of the median of the differences between the audit delays in the years considered with the support of the sign test was performed. The results are shown in Table 6 and indicated significant differences in the audit delay for the subsample of companies that presented the KAM section at a significance level of 10% (*D* statistic of 1.78) but with a sign contrary to what was expected in the formulation of the hypothesis. All other differences were rejected at the same significance level or better; that is, they did not indicate a significant change in the median of audit delays between periods. Considered together, these results reinforce the previous evidence in the sense that they not only refuted the hypothesis of an increase in the audit delay after the adoption of the KAM but also corroborated the occurrence of an opposite effect in some cases, that is, a reduction in the audit delay, adherent to the evidence for the French case (Bédard et al., 2019).

Table 6
Signal Test Results for Subsamples

	Observations	*D Statistics*	*p-value*
With KAM in 2016	81	1.776	0.076
Without KAM in 2016	41	0.269	0.788
Both subsamples	122	1.331	0.183

Null hypothesis for all lines: $ADL_{2015} = ADL_{2016}$

Finally, as the characteristics of audited companies and audit firms potentially influence the audit delay, multivariate analyses were desirable. Accordingly, the third test proposed by this study was carried out. The application of the econometric model adopted here should be viewed with caution due to data micronumerosity and improbable well-behaved distributions; however, it allows convenient control of relevant independent variables. This stage of analysis began with the observation of correlations between the variables considered.

Table 7
Pearson's Correlation between Pairs of Variables

	ADL	*KAM*	*YEAR*	*LNAT*	*GC*	*IBOV*	*FIN*	*OQ*	*BIG4*
ADL	1								
KAM	0.065	1							
YEAR	-0.072	0.000	1						
LNAT	0.014	0.240*	0.004	1					
GC	-0.018	0.598*	0.000	0.141*	1				
IBOV	-0.007	0.462*	0.000	0.359*	0.555*	1			
FIN	-0.058	-0.550*	0.000	-0.020	**-0.793***	-0.639*	1		
OQ	0.074	-0.289*	-0.055	-0.025	-0.359*	-0.248*	0.320*	1	
BIG4	-0.043	-0.131*	0.000	-0.117	-0.170*	-0.245*	0.190*	0.061	1

Caption: * indicates significance at the 5% level

The results presented in Table 7 initially demonstrate that none of the explanatory variables alone explains the behaviour of the audit delay. Among the independent variables, a strong correlation was found between the pair of variables *GC* and *FIN*, equal to -0.793, signalling precaution due to the threat of multicollinearity in econometric evaluations. As a result, alternative models evaluated without the *FIN* (model 1) and *GC* (model 2) variables were generated.

Moreover, in relation to the correlation between the independent variables, and considering the focus of the study, it is noteworthy that the adoption of the KAM section is: (i) directly associated with the size of the entities (*LNAT*), belonging to the governance segment B3's corporate structure (*GC*) as well as to the Bovespa Index (*IBOV*), which were all consistent with the authors` expectations; (ii) inversely associated with the financial segment (*FIN*) and the big four audit firms (*B4*), which can be explained by the selection bias of the sample, considering the focus on financial institutions that were almost exclusively audited by the main auditing firms (Guimarães and Dantas, 2015); and (iii) also inversely associated with the incidence of qualified opinion (*OQ*) in the audit report, suggesting that the adoption of the KAM section may have influenced the incidence of opinion modification in the audit report. This last evidence suggests the relevance of a study that explores this relationship in greater depth to confirm the possible impacts of adopting KAM on the type of opinion issued by the auditors.

Subsequent to the evaluation of the correlations, two versions of the base model were estimated – using, alternately, the independent variables *FIN* and *GC*, given the risk of multicollinearity. Estimations were then carried out with the POLS model as well as the FE and RE models. The results of this combination of tests are summarised in Table 8.

Table 8
Main Results of the Estimates [dependent variable: ln(ADL)]

Variables	POLS (1)	FE (1)	RE (1)	POLS (2)	FE (2)	RE (2)
KAM	0.0524	-0.927	0.0432	-0.0347	0.123	-0.0496
	(0.124)	(0.618)	(0.133)	(0.115)	(0.364)	(0.128)
YEAR	0.0537	0.0492	0.0502	0.0560	0.0492	0.0516
	(0.0773)	(0.0597)	(0.0595)	(0.0792)	(0.0597)	(0.0595)
*YEAR*KAM*	-0.176	**-0.182****	**-0.175****	-0.178	**-0.182****	**-0.176****
	(0.126)	**(0.0731)**	**(0.0727)**	(0.125)	**(0.0731)**	**(0.0727)**
LNAT	-0.00801	0.253	-0.00125	0.0164	0.253	0.0226
	(0.0224)	(0.212)	(0.0349)	(0.0237)	(0.212)	(0.0363)
GC	0.0152	**1.050****	0.00654			
	(0.120)	**(0.412)**	(0.131)			
FIN				**-0.274****	-0.249	**-0.271***
				(0.113)	(0.458)	**(0.139)**
IBOV	-0.0576	**-0.766****	-0.0676	**-0.209***	**-1.015*****	-0.222
	(0.109)	**(0.293)**	(0.128)	**(0.116)**	**(0.367)**	(0.142)
OQ	0.158	-0.0161	0.0830	0.197	-0.0161	0.104
	(0.128)	(0.158)	(0.120)	(0.129)	(0.158)	(0.119)
BIG4	-0.0743	0.263	-0.0738	-0.0466	0.263	-0.0460
	(0.289)	(0.332)	(0.273)	(0.285)	(0.332)	(0.269)
CONSTANT	**4.384*****	-0.0156	**4.293*****	**4.207*****	-0.0156	**4.126*****
	(0.437)	(3.547)	**(0.644)**	**(0.410)**	(3.547)	**(0.633)**
Observations	244	244	244	244	244	244
Prob > *F* [#]	0.025	0.032	0.184	0.081	0.030	0.056
R^2	0.025	0.086	0.073	0.052	0.086	0.074
N	122	122	122	122	122	122

Legends: *** p < .01; ** p < .05; * p < .1. Standard error in parentheses. Parameters significant at 0.1 are shown in bold. [#] Prob > χ^2 for RE models.

Based on the results, the econometric analyses shows with reasonable consistency the opposite effect to that expected by the research hypothesis due to the introduction of the KAM section, based on the relationship of the variable of interest, that is, *YEAR*KAM*. In four of the six estimates, a negative association was found between the variable of interest and the dependent variable, while the research hypothesis had predicted a positive association. Thus, similarly to what was pointed out by the graphical analysis, *KS* tests and comparison of central tendency statistics, the regressions showed a reduction in the audit delay with the adoption of the new section.

Despite the absence of other variables in the econometric model, the results of the estimations convincingly aligned with the preceding conclusions. The *dif-in-dif* estimator represented by the interaction variable *YEAR*KAM* showed negative signs, being significant at the 10% level in almost all tested models except for the estimates with pooled data, which suffered from the known omitted variable bias (Henderson & Kaplan, 2000). Among the panel models, the RE models were preferred by the results obtained in the Hausman tests (results not shown).

Regarding the control variables, the tests revealed that, in general, the audit delay was negatively related to the *IBOV* and *FIN* variables, indicating that entities listed on the stock exchange or belonging to the financial sector had shorter audit delays than those not listed or from other economic sectors. Together with the significance of the interaction variable, the result of the *FIN* variable suggests that there was a small risk of increase in the audit delay of financial institutions with the requirement to publish the KAM section in audit reports from 2020.

Additionally, empirical testing did not find a relationship between the audit delay and the size of the entities (*LNAT*), with a qualification of opinion (*OQ*) in the audit report, with the fact that the audit firm is one of the big four (*BIG4*), or by meeting B3's corporate governance levels (*GC*).

The results have expected shortcomings. *F* statistics, although relevant to the usual 10% significance level, would be rejected at more demanding levels. For the RE model with the *GC* variable [i.e., RE(1)], all coefficients but one were rejected at the usual level of 10% or better. Adhering to the mentioned deficiency, the explanatory power of each model, measured by the coefficients of determination (R^2) of the estimates, were low with values varying close to an average of 7% but never higher than 9%. The presence of several dummies in the regressions, given the absence of other available variables, certainly contributed to the existence of the weaknesses mentioned in the econometric analyses. By an ad hoc choice of the authors, regressions were carried out, despite the existing deficiencies, to support the results obtained in the univariate evaluations.

In summary, the results seem conclusive in indicating that there was no increase in the audit delay in the first year of publication of the KAM section. As mentioned earlier, the results qualitatively align with what was found for the French case (Bédard et al., 2019).

Despite the results, it seems extreme to use the quantitative result found to infer that there was no increase in the production costs of the audit service, as in Mello et al. (2021). It is preferable, here, to reinforce that there may have been a displacement of the workforce, within auditing firms, from conventional engagements towards those in which the KAM was required, which would explain the result found. In any case, the need to incorporate other elements into the analysis to form a definitive conclusion on the subject is evident.

5 Conclusion

Since the enactment of the Sarbanes–Oxely Act and especially the shortening of the deadline for submitting financial reports in the US since 2006, there has been increasing pressure on auditing firms and independent auditors to deliver their assurance reports in a timely manner. Exercising a driving force in this process, the incorporation of new innovative mechanisms such as the use of artificial intelligence in audit services could possibly impose a greater pressure on auditors.

In this context, the creation of the KAM section would imply the risk of extending the time needed to finalise the assurance report and, consequently, to publish the financial statements. Other authors in Brazil investigated the effects of the requirements brought by the new section on the quality aspects of auditors' reports (e.g., Cruz, Nardi, Figueira, & Silva, 2019; Camargo et al., 2019). The current study evaluated the effects of KAM on one of the main determinants of the time to deliver a financial statement, the audit delay.

Additionally, the requirement to communicate the KAM section in the independent audit reports in the financial statements of Brazilian financial institutions was imposed from 2020 onwards by the CMN`s Resolution 4,720, which has generated fears about a possible increase in the time of publication of these reports by an important sector in the national economy. Motivated by this concern, this study evaluated the hypothesis that the creation of the KAM section would be associated with an increase in the audit delay. As an input to assess the likelihood or possible impact on financial institutions' statements in 2020, one could observe the changes in the audit delay in 2016, the first year of the requirement to publish the new section for public companies.

The results were consistent with what was documented for the French case (Bédard et al., 2019), in which the appearance of the new section was associated with a reduction in the audit delay, as opposed to the adverse effect proposed by the research hypothesis. From another point of view, the results of the French and Brazilian cases are in line with the idea that auditors completed their processes in a timely manner even after the emergence of the KAM section, generating greater utility for users of the assured statements.

Thus, in response to the fear attributed to the requirement to include the KAM section in the audit reports of financial institutions, the consistent significance of shorter audit delay for companies in the financial sector consolidates the perception of low risk of delays caused by the new resolution.[iv]

This study also revealed that knowledge on the audit delay debate is incomplete. Quantitative assessments such as the one carried out in this paper consistently show low coefficients of determination and, not rarely, only address one of the two sides that constitute the audit market: the supply by auditing firms and the demand by the audited entities. Outside the quantitative framework, qualitative assessments could add contemplation of final negotiations between the audit firm and audited corporation, which precedes the delivery of the auditors' report and is an essential part of the entire assurance service.

Observing the quantitative analyses with critical lenses, a definitive answer to the proposed problem requires the incorporation of new variables that reflect other elements of the complexity of the audited entity and the client's risk, as suggested by Simunic (1984).

On the audited entity's side, poorly structured controls or deficient systems that could generate greater difficulty for the audit process leading to longer audit delay are not necessarily captured by the *LNAT* or *GC* variables. Fintechs with integrated technology, for example, may facilitate the faster processing of audit activities despite having lower asset size or less structured corporate governance than the established incumbents. In this line, other variables that measure the quality of controls or the complexity of the audited entity could add to the measurement of *ADL* variations.

On the audit firm's side, greater effort or workload may be related to shorter *ADL*, which does not seem to have been captured by the variables used in this study. If an adequate proxy could be constructed to measure the inputs in each engagement, the number of hours allocated and the proportion of seniority of the allocated team constitute information calculated by auditing firms (Knechel & Payne, 2001). Although access to this information is restricted, its use could contribute to a better understanding of the determinants of audit delay and the real impact of the introduction of the KAM section on the market worldwide.

The opposite results in the audit delays observed for the subsamples of companies with and without KAM are indicative of a labour shift within audit firms towards engagements in which the new section is

required. Although speculative, this is a potential area for future research; a definitive answer is dependent on additional information and data.

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Appendix
List of entities included in the analysis

ABC Brasil	Bradesco	JBS
Ambev	Bradespar	Klabin
Azul	Braskem	Localiza
B2W	BRB	Lojas Americanas
B3	BRFoods	Lojas Renner
Banco Alfa	brMalls	Magazines Luiza
Banco Caterpillar	BTG	Marfrig
Banco CCB	CBD – Pão de Açucar	Metalúrgica Gerdau
Banco CNH Industrial	CCR	MRV
Banco da Amazônia	CEF	Multiplan
Banco de Desenv Extremo Sul	Cemig	Natura
Banco de Desenv. de MG	Cielo	Original
Banco De Lage Landen DLL	Citibank	Paraná Banco
Banco do Brasil	Cogna	Petrobrás
Banco do Estado de SE	Cosan	Petrobrás Distribuidora
Banco do Estado do PA	Crédit Agricole	Pine
Banco do Nordeste	Credit Suisse	Qualicorp
Banco Fibra	CSN	Rabobank
Banco Fidis	CVC	Raia-Drogasil
Banco GMAC	Cyrela	Rumo
Banco Haitong	Daycoval	Sabesp
Banco Honda	Deutsche Bank	Safra
Banco IBM	EcoRodovias	Santander Brasil
Banco Mercantil do Brasil	Eletrobrás	Scotiabank
Banco Mercedes Benz	Embraer	Sicredi
Banco Mizuho	Energias	Smiles
Banco Modal	Engie	Société Genérale
Banco PAN	Equatorial	Socopa
Banco Sumitomo Mitsui	Fleury	Sofisa
Banco Tokyo-Mitsubishi MUFG	Gerdau	Suzano
Banco Toyota Brasil	Gol	Taesa
Banco Triangulo	Goldman Sachs	Telefônica Brasil
Banco Volkswagen	Hypera	TIM Participações
Bancoob	Iguatemi	Ultrapar
Banestes	Industrial do Brasil	Usiminas
Banrisul	Indusval	Vale
BBSeguridade	Intermédica	Via Varejo
BMG	Intermedium	Votorantim
BNDES	IRBBrasil	WEG
BNP Paribas	Itausa	YDUQS
BOCOM BBM	ItaúUnibanco	

NOTES

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DATASET
The dataset that supports the results of this study is publicly available.

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[i] In Brazil, the standards that marked the so-called new structure for the audit report are NBC TA 260 (R2) – Communication with those Responsible for Governance; NBC TA 570 – Operational Continuity; NBC TA 700 – Opinion Formation and Issuance of the Independent Auditor's Report on the Financial Statements; NBC TA 701 – Communication of Key Audit Matters in the Independent Auditor's Report; NBC TA 705 – Modifications to the Independent Auditor's Opinion; and NBC TA 706 – Emphasis Paragraphs and Other Matters Paragraphs in the Independent Auditor's Report.

[ii] Given by paragraph 3 of article 21of CMN`s Resolution 3,198, included by the CMN`s Resolution 4,720.

[iii] The sign test used in this study, called Wilcoxon by the statistical software applied in the analysis (Stata 14's signtest), should not be confused with the ranksum test known by the same name (Stata 14's ranksum).

[iv] As the COVID-19 pandemic changed the deadlines for publication of financial statements in several countries, including Brazil, the subsequent assessments of the effective results of the introduction of the KAM section in financial institutions, in 2020, will encounter new challenges. Although it is feasible to expect expansion in the audit delay in 2020, it has become more difficult to segregate the impacts arising exclusively from the requirement to publish the new section.