International Journal of Auditing and Accounting Studies
2(2), 2020 : 107-128

ARF INDIA
Academic Open Access Publishing
www.arfjournals.com

Audit Fees and Audit Firm Switch : Evidence from Brazil

Marcelo Antonio Pierri Junior*[1], Rita de Cássia C. Pepinelli[2] and Luiz Alberton[3]

[1]*Departament of Accounting, Centro Universitário Estácio de Sá (Santa Catarina) Brazil.*
**Correspindingauthor: Email: marcelopierrijr@gmail.com*
[2]*Departament of Accounting, Universidade Federal de Santa Catarina, Brazil, E-mail:rccpcamargo@gmail.com*
[3]*Departament of Accounting, Universidade Federal de Santa Catarina, Brazil, E-mail:luiz.alberton@ufsc.br*

ARTICLEINFO

Received: 4 July 2020
Revised: 14 August 2020
Accepted: 20 August 2020
Online: 20 October 2020

Keywords:
Audit firm changes.
Audit fees.
Mandatory audit rotation.

ABSTRACT

The Brazilian audit market case can represent different aspects of audit market competition because our market structure and institutional environment of an emergent country. The objective of this study is to observe whether the audit fees are affected during the audit firm changes in the period of 2010 and 2014 in Brazil. More specifically, this research tried to discover the effects of the mandatory and voluntary changes in the audit fees and their consequences in the audit market competition. The sample was set based on non-financial companies in BM & FBOVESPA, resulting in 354 companies.From the model of fixed effects, it was noticed that the discount in the audit fees in mandatory audit firm changes and the lateral changes in the initial year of the relationship. This result is possible because of the competition among firms, once there is a coincidence in the firm change period (2012). There was no significance in the voluntary changes, which may be a consequence of the circumstances that they occurred, and they may be motivated by misunderstandings with the auditing firm, by the search of better quality in the services. On the other hand, our results in non Big-Four to Big-Four and Big-Four to non BigFour switchesdemonstrate that audit quality doesn't influence the audit firm switch and what really matters is the competition in the market.

1. INTRODUCTION

As a consequence of different motivations and information asymmetry between owners (shareholders) and business administrators, the agency theory presented by Jensen and Meckling (1976) predicts the need for monitoring mechanisms to reduce agency cost and inhibit opportunist behavior by managers. The independent audit represents one of those

monitoring mechanisms, once it makes more difficult for managers to hide the consequence of their actions (Lennox, 2005).

For the monitoring performed by the audit firm to be effective, the auditor must report the gaps found in the contracts between managers and shareholders, which is theoretically ensured by the auditor's own definition of independence (Watts & Zimmerman, 1983). However, one of the issues that permeate the relation between the audit firm and the audited company (client) is the audit fees.

The discussion within the audit fees has begun with the seminal article of Simunic (1980). On the other hand, since 1970, the competition between firms and the audit fees charged is a matter of concern to regulators, researchers, and professionals (Villiers *et al.*, 2014). Debates related to independence and market concentration have become central to the direction of audit services, especially with the end of Arthur Andersen's. As a way of avoiding future financial collapses, besides an improvement in governance practices, oversights in controlling and limitation of non-audit services agencies were required.

In Brazil, audit firms are also required to rotate the audit firm every five years and must wait at least three years for a possible rehiring. Since 2010, with the change in Brazilian legislation by the 'Comissão de ValoresMobiliários' (CVM) (Securities Commission), companies listed on the São Paulo Stock Market (B3) are required to disclose the amount of udit fees and fees not related to the audit.

That compliance has triggered the first empiric Brazilian studies about audit fees. The factors that determined the fees in Brazil were observed by Camargo *et al.* (2011) Hallak and Silva (2012), Castro *et al.* (2015). From another perspective, Martinez and Moraes (2014) approached the audit fees related to audit quality while Munhoz *et al.* (2014) analyzed its impact on the IFRS adoption. During these five years of disclosure, no studies were found in Brazil that observe the behavior of fees in a longitudinal way and considers the relationship between fees and the change of the audit firm, whether mandatory or voluntary, and the types of firms involved.

Butterwoth and Houghton (1995) found out some piece of evidences that to avoid the increase in the audit fees charged, North American companies would change the audit firm not only to follow the mandatory rotation but also to decrease their costs. Hay, Knechel, and Wong (2006) have also reinforced this finding, indicating the overall researches on audit fees has shown that the audit firm switch implies in audit cost reduction. Given this scenario, the objective of this study is to observe whether the

behavior of audit fees is affected during the change of the audit firm in the period from 2010 to 2014.

In theoretical terms, the international literature on the subject presents mixed and inconclusive findings in different countries. As an example, studies conducted in Italy and the United States, there is evidence that the switch of auditors results in discounting fees. However, in other countries, opposing behavior was observed. In Korea, the switch of audit firms generated an increase in fees. In Australia and Japan there was no record of discounts on the audit fees. This theoretical discussion demonstrates relevance and the necessity of an evaluation of the reflexes that these switches provoke in the Brazilian companies' fees. There is, therefore, a gap in the Brazilian literature regarding changes in fees resulting from the characteristics of the relationship between the auditor and audited company (mandatory / voluntary exchanges and lateral/non-lateral exchanges) and the present study offers an advance for this knowledge to be formed.

This research aims at contributing for independent audit literature in Brazil, especially to the behavior of audit fees theme, besides helping in the understanding process of audit firms' competition. The behavior of audit fees in Brazil were investigated in studies such as Camargo *et al.* (2011), Hallak and Silva (2012), Castro *et al.* (2015), Vogt *et al.*(2015) and Pierri Junior *et al.* (2016); however, except the last one, they did not observe the behavior of fees concerning the kind of audit firm switch. Besides that, the audit firm switches were analyzed when they were voluntary and when they were mandatory as a consequence of audit firm change.

In practical terms, audit fees are a consideration for auditors to perform the function of monitoring agency relationships. This has the consequence of reducing informational asymmetry. Characteristics of this relationship, which includes contracts signed between principal and agent, are amended, in accordance with the contractual conditions established between the auditors and the audited companies. The costs of agency change, especially in relation to the conditions of choice, retention and modification of the auditors.

Thus, characteristics of the hiring of auditors by the audited company, such as the switch of audit firm, whether mandatory or voluntary, bring about changes in the pricing of this consideration. Also, affecting the audit cost is the fact that the switch occurs from a larger audit firm to a smaller one or from a smaller firm to a larger one (up/down changes). Another view that must be is when the change occurs between firms that have similar

sizes, that is, between larger or between smaller (lateral exchanges).

In the United States, the mandatory audit firm rotation was considered by the PCAOB in 2011, with a study about the positive and negative consequences of their establishment. However, this rotation hasn't been approved by the U.S senate yet (Cameran *et al.*,2015). The circumstances of mandatory or voluntary audit rotation has been subject to further reflection by literature and regulators agencies, the Brazilian case, can help foreign institutions like European Commission and U.S house of representative about the effects of mandatory audit rotation in audit fees and market competition. Pratoomsuwan (2017) says that it might be insufficient just to study single-country audit pricing., because the audit fees varies across countries and there is a difference between the emerging markets and the developed audit markets, like USA.

Besides that, the Brazilian case can represents different aspects in audit market competition because our market structure and institutional environmental of an emergent country, this way, ours results shows a new aspect to the audit international literature.Furthermore, CVM can analyze our results about the competition in Brazilian audit market and the effects of the audit firm rotation policy.

Data analysis was carried out through a data pattern in panel. A short and unbalanced panel from that period was used with information displayed about audit firm fees in Brazil between 2010 and 2014. One thousand, four hundred and ninety audit fees observations in the period were manually collected. It was possible to notice a discount on the fees in around 25% on the mandatory audit firm changes like inEtterdgeand Greenberg (1990), Simon and Francis (1988) and Ghosh andLustgarten (2006), where there is some evidence of the competition among the audit firms in Brazil. On the voluntary changes, it was not observed any significant variations in the value of fees charged by the firms during the period of this study. In non lateralaudit firm switches, there wasn't evidence of difference in audit fees. This could show that audit quality doesn't influence the audit firm switch and what really matters is the competition in the market.

This article, besides this introduction, is made up of four other sections. In the next section, the theoretical framework as well the hypotheses investigated in this study are presented. After that, the methodological procedures used to carry out this research are described.

In the last section, the findings and the conclusion of this study are shown.

2. THEORETICAL FRAMEWORK

2.1. Agency Theory and Audit Firm Changes

The Agency Theory defined by Jensen andMeckling (1976) contemplates the agency relationship between contracts, in which one or more people (principal) employs another person (agent) to perform a service on their behalf. Not always these agencies tend to synchronize their goals with the main one; this way, the agency cost is considered. Jensen andMeckling (1976) approach the importance of auditing as a factor of monitoring to reduce the agency cost. One of this theory issues is the search for balance between what is sent to be monitored (audit fees) and the benefit that it will have by executing this service (stakeholders confidence).

However, the inclusion of auditing in the relation of owners and managers creates a new agency conflict. Thus, to solve any possible problems among agents and to preserve the audit firm independence, it is customary to create mechanisms to protect the market. Thus, there is a regulated audit rotation in Brazil to try to reduce the problems. There is also the auditors' limitation in their negotiation with the people in charge of governance.

Regarding the audit firm's rotation, it can be costly, even though there are some controversial results. Cameran *et al.* (2015) indicate that the increase in audit fees as consequence of the audit firm switch may be considered, as this increase is not related to the increase in audit quality. In this sense, Coberlla *et al.*(2015), also in the Italian market, found evidence that during the rotation, the audited firm paid the Big-Four audit firm lower fees while the fees for non-Big-Four companies did not change.

2.2. Discount on Audit Fees

The audit firm may experience losses in the initial years of the audit relationship due to the expectation of future profits from a contract in the long term. This phenomenon is called low-balling, when the audit firms give a discount in the first year, and recover the losses of the initial engagement in subsequent years. Performing an audit for fees inherently low to allow the audit firm reasonably comply with audit standards is a significant threat to due professional care and compliance with professional standards. ForHai (2019) the definition on the policy ofaudit fees and costs are factors that influence the quality of the audit.However,Kraub *et al.* (2010) approach that low balling is only an answer from auditors due to competition and market structure and has no adverse effects on the quality of the audit.

There is a concern that the audit firm could see the new clients only as investments. And,this could be a problem because the audit firm could modify its judgment so as not to lose the relationship with the customer. Yet, Deangelo (1981) defends the process of reducing the prices to conquer the market is part of the competition process and the expectation of getting future profitability. Besides that, the audited companies have their power to reduce the initial audit fee. According to Hay *et al.*(2006),the low audit fees in the first year could be the result of better efficiency of new auditors.

2.3. Research hypotheses

Hay *et al.*(2006) state that one of the reasons cited by the clients to change the audit firm is the cost reduction.This discount can be offered to win the customer or could be justified by the efficiency of the new auditor (Hay *et al.*, 2006).

There are mixed results about the initial year of audit engagement. Simon and Francis (1988), Hay *et al.*(2006), Wahab and Zain (2013) and Desir *et al.*(2014) found a discount on the initial audit fees. However, some studies have not found evidence that showed the audit fees cut by the time the audit firm changed but only with the long-term relationship between the audit firm and the audited company.

Simon and Francis (1988), Ettredge and Greenberg (1990) and Desir *et al.* (2014) observed a discount on audit fees in around 20% in the initial year of relationship.On the other hand, Huang, Raghunandan and Rama (2009) did not find any evidence of audit fees discount in the first year of change after Sarbaney-Oxley Law (SOX). Pierri Junior *et al.*(2016) didn't found discount in the initial year of audit engagement, but their research involved a probabilistic sample. In Brazil, due to the mandatory rotation of audit firms it was decided to investigate through two perspectives, the voluntary audit firm change and the mandatory audit firm change in this study. These two options tend to influence the relation among the audit service, its quality and therefore the fees.

Thus, the following hypotheses are:

H1a: Companies that mandatorily changed the audit firm pay in the initial year of the relationship lower audit fees.

H1b: Companies that voluntarily changed the audit firm pay in the initial year of therelationship lower audit fees.

Cameran *et al.* (2015) found a discount of around 17% in the initial year of relationship in the mandatory changes. However, in subsequent years, the fees rose around 76%. Coberlla *et al.*(2015) observed that the auditors'

fees were discounted by Big-Four firms, a result contrary to that of non-Big-Four firms. On the other hand, Kwon *et al.* (2014) found higher fees in the initial years of the relationship.

The excess of audit fees in the initial relationship between the auditor and the client may occur because of the need of becoming familiar with the client, planning, and execution of qualified auditing (Kwon *et al.*, 2014). However, the effect of competition among audit firms may cause the discount on the amount charged. Kwon *et al.*(2014) discuss that it is more likely to be discounted in the initial year when the relationship with the audit firm is longer. That is, in short periods of rotation of the audit firm, companies tend not to offer this discount.

Previous studies indicate that depending on the nature of the audit firm's change, the behavior of the fee amount in the initial relationship year can occur in different ways. Thus, audit firm rotation among Big-Four audit firms or between a Big-Four company and a non-Big-Four may impact differently on the audit fees.

Craswell and Francis (1999) found no evidence of fee discounting except when the initial relationship is between non-*Big-N* to *Big-N* firms. The authors assert that the result would be justified in the economic theory of the buyer induction. That buyer searches a product with more quality, and the seller (*Big-N* firms) promotes a discount on their initial fees in order to be hired and be able to show quality of their audit services.Bhattacharya e Barnerjee (2020), in a sample of Indian firms, noted that the premium on audit fees is common for the auditors affiliated to any Big 4 auditor or have industry specialization.

Cheuk (2006), on the Australian Stock Exchange, did not observe any significant discount in any of the changes that occurred among the different tier of audit firms. Kasai (2009), in the Japanese audit market, didn't find anyevidence of the initial audit discountingin 2007 between the lateral changeseither. Köhler and Ratzinger-Sakel (2012) observed the behavior of the audit fees is related do the client size. The first results show that Big companies have more bargaining power and tend to get a higher discount on audit fees. In smaller companies, it was only observed that significant differences in audit fees occur from non-*Big-Four* to non-*Big-Four* companies or between non-*Big-Four* to *Big-Four*. Ghosh andLustgarten (2006) work on the variables of audit market structure in two similar ways only with synonyms: the oligopoly market (made up by the four major audit firms) and the remaining auditors. They observed a bigger discount on the changes between non-Big-Fourcompanies (24%) than between the Big-Four firms' changes (4%).

This way, the following hypotheses are formulated:

H2a: the lateral changes of audit firms affect the audit fees price in the beginning year of the relationship.

H2b: the audit firm changes from Big-Four to non-Big-Four or from non-Big-Four to Big-Four affect the audit fees price in the beginning year of therelationship.

In the next section, the procedures used to test the research hypotheses are presented.

3. METHODOLOGY

Documentary research was used to verify the relation between the audit fees charged in the Brazilian companies and the audit firm changes. Data were extracted from the reference forms and standardized financial statements of the sample companies. The research sample is made up of all the non-financial companies listed on BM & FBOVESPA from 2010-2014. Data were collected from March to September 2015. Data concerning the audit fees were collected manually.

To obtain data that allowed the analysis of fees throughout the time, companies that did not have information about the fees and/or auditors for at least three years were excluded from the sample. 37 companies were excluded for not having information on audit fees in accordance with these specifications. The final sample was made of 317 companies, contemplating 1,490 observations for the 5 years analyzed (2010-2014).

The audit fees, information about the audit firm, as well as the existence of subsidiaries and restructure operations in the period, were collected manually through a Reference Questionnaire (RF), published individually for each company. Accounting data, as the assets value and loss occurrence, were obtained from the base of Economática® data.

Data analysis was performed using two panel data models with the help of Gretl® statistical software. The panel used was short, as it had information from a smaller number of years (four years) and a greater number of individuals (317 companies) and was unbalanced since some companies did not have data available for all the years analyzed.

The variable investigated in this research is based on studies that investigated the audit fees variations within the context of auditor change or audit firm. In Table 1, the investigated variables are presented.

Table 1
Variables investigated in this research

Variables	*How to measure*	*Reference*
Dependent variable		
Audit Fees (LnAF)	Audit Fees Logarithm in *reais* currency.	Craswelland Francis (1990), Cheuk (2006), Kasai (2009), Camargo *et al.*(2011), Köhler and Ratzinger-Sakel (2012), Pierri Junior, Bhattacharya e Barnerjee (2020),
Independent Variables Interest Variables		
Lateral (LATCH)	Dummy variable that assumes 1 if there is a Big-Four firm change to Big-Four or non-Big-Four to non-Big-Four; and 0 if there is not.	Craswelland Francis (1990), Cheuk (2006), Kasai (2009), Köhler and Ratzinger-Sakel (2012), Pierri Junior Pepinelli Alberton (2016)
Bigger Change (BIGCH)	Dummy variable assumes 1 if the change is between a non-Big-Four to a Big-Four company; and 0, it is not.	Craswelland Francis (1990), Cheuk (2006), Kasai (2009), Köhler and Ratzinger-Sakel (2012), Pierri Junior, Pepinelli e Alberton (2016)
Smaller Change (SMLCH)	Dummy variable assumes 1 if the change is from a Big-Four to a non-Big-Four company; and 0 if it is not.	Craswelland Francis (1990), Cheuk (2006), Kasai (2009), Köhler and Ratzinger-Sakel (2012), Pierri Junior, Pepinelli e Alberton (2016)
Mandatory Change (MANCH)	Dummy variable assumes 1 if the change of audit firm is a mandatory change; and 0, if it is not.	Cameran *et al.* (2015) and Coberlla *et al.*2015)
Voluntary Change (VOLCH)	Dummy variable assumes 1 if the change of audit firm is a voluntary change; and 0, if it is not.	Cameran *et al.* (2015) and Coberlla *et al.*2015)
Controlling Variables		
Company Size (l_TA)	Total Assets Logarithm of the audited company.	Craswelland Francis (1990), Köhler and Ratzinger-Sakel (2012), Holm and Thinggaard (2014), Pratoomsuwan (2017), Bhattacharya e Barnerjee (2020),

cont. table 1

Variables	*How to measure*	*Reference*
Company Complexity (SUBSD)	Dummy variable assumes 1 if the audited company has subsidiaries; and 0, if it does not have.	Craswell and Francis (1990), Köhler and Ratzinger-Sakel (2012), Holm and Thinggaard (2014), Pratoomsuwan (2017)
Company Complexity (SUBFD)	Dummy variable assumes 1 if the audited company has foreign subsidiaries; and 0, if it does not have.	Craswell & Francis (1990), Whisenant, Sankaraguruswamy, and Raghunandan (2003)
Inherent Risk (l_RISCI)	Receivables plus inventory divided by the total asset.	Simon and Francis (1988), Camargo *et al.* (2011), Köhler and Ratzinger-Sakel (2012)
Liquidity (l_LIQT)	Total Assets/total liabilities	Craswelland Francis (1990), Whisenant, Sankaraguru-swamy, and Raghunandan (2003), Köhler and Ratzinger-Sakel (2012), Pratoomsuwan (2017),
Loss (LOSS)	Dummy variable assumes 1 if the company had losses in the period; and 0, if it did not have.	Cheuk (2006), Kasai (2009), Holm and Thinggaard (2014), Pratoomsuwan (2017),
Restructuring Operations (REST)	Dummy variable assumes 1 if there was a restructuring operation in the company in the period; and 0, if there was not.	Camargo *et al.* (2011), Pepinelli e Alberton (2016)
Audit Firm (BIGF)	Dummy variable assumes 1 if the audit company is a Big-Four; and 0, if it is not.	Cheuk (2006), Kasai (2009), Camargo *et al.* (2011), Pierri Junior *et al.*(2016), Bhattacharya e Barnerjee (2020),

Source: Created by this research authors

Two models were used, the first one is to analyze the fees variation in mandatory or voluntary changes, and the second model is to analyze the kind of audit firm change.

The equation of the two models used that represents the variables in Table 1 is shown this way:

$$LnAF_{it} = \beta 0 + \beta 1MANCH_{it} + \beta 2VOLCH_{it} + \beta 3l\_TA_{it} + \beta 4l\_RISCI_{it} + \beta 5l\_LIQT_{it} + \beta 6SUBSD_{it} + \beta 7SUBFD_{it} + \beta 8LOSS_{it} + \beta 9BIGF_{it} + \beta 10REST_{it} + \varepsilon.$$

$$LnAF_{it} = \beta 0 + \beta 1LATCH_{it} + \beta 2BIGCH_{it} + \beta 3SMLCH_{it} + \beta 4l\_TA_{it} + \beta 5l\_RISCI_{it} + \beta 6SUBSD_{it} + \beta 7SUBFD_{it} + \beta 8l\_LIQT_{it} + \beta 9LOSS_{it} + \beta 10BIGF_{it} + \beta 11REST_{it} + \varepsilon.$$

Where:

AF – Audit Fees.

LATCH- Indicates the occurrence of a Big-Four firm changing to another Big-Four or a non-Big-Four to a non-Big-Four.

BIGCH – Indicates the occurrence of a non-Big-Four firm changing to a Big-Four firm.

SMLCH – Indicates the occurrence of a Big-Four firm changing to a non-Big-Four.

MANCH– Indicates the occurrence of a mandatory firm change forced by Law.

VOLCH – Indicates the occurrence of a voluntary firm change.

l_TA – Company Size.

SUBSD – Indicates the company complexity (number of subsidiaries).

SUBFD – Indicates the company complexity (number of foreign subsidiaries).

l_RISCI -Ratio of the sum of inventories and receivables by total assets.

l_LIQT – Company liquidity.

LOSS – Indicates the occurrence of loss.

BIGF – Indicates if the company was audited by a Big-Four firm.

REST – Indicates the existence of restructuring operations in the company, such as acquisition, merger or incorporation.

The dependent variable is the audit fees transformed in its natural logarithm. The first model comprises the two variables tested for mandatory firm change (MANCH) and voluntary firm change (VOLCH). The second model, however, the independent variables tested are the dummy variables for each kind of audit firm changes, which tries to help on the fees observation taking into consideration this effect. The rotation analyzed was a non-Big-Four firm to a Big-Four firm (BIGCH), from a Big-Four to a non-Big-Four firm (SMLCH) or concerning the lateral changes (LATCH), which comprise changes from Big-Four to Big-Four and from non-Big-Four to non-Big-Four.

The audit fee premium varying to the risk levels across countries and culture, extent the influence the country culture about audit work

environment (SINGHVI, 2014).Thus, the value of the audit fee is related to the characteristics of the audited company. We use control variables in the audit fees model, as the total asset logarithm (l_TA), liquidity (LIQ), loss (LOSS), audit firm tier (BIGF) and receivables plus inventories divided by the total assets (RISCI), loss (LOSS), existence of restructuring operations in the company (REST), with the intention of controlling the relations among the tested variables.

We control the effects of company size through the total asset variable. Hay *et al.* (2006) found that the fees variation is on average explained by around 70% by the company size. This may be related to the additional work of audits in larger companies, since the number of accounting elements and transactions is higher (CHEUK, 2006). The *proxy* used in this study was the total asset logarithm (l_TA). It is expected that the audited company size (l_TA) presents a positive relation with the audit fees (Simunic, 1980; Cheuk, 2006; Kasai, 2009; Hallak *&* Silva, 2012; Zerni, 2012; Bhattacharya *&* Barnerjee, 2020).

In the meta-analysis of Hay *et al.* (2006), inventories and receivables are variables that represent part of the company inherent risk because they demand a possible higher quantity of audit procedures. The inherent risk was added to the model from the sum variable of the inventories and receivables divided by the total assets (l_RISCI). It is expected a positive relation between this variable and the audit fees.

Beyond inherent risk, an alternative measure of the company situation, the liquidity represents the risk of a company going bankrupt. Companies with higher liquidity are less risky because their probability of bankruptcy is lower (CHEUK, 2006). We use the general liquidity ratio (l_LIQT) to measure this variable.

The profitability of the audited companywas measured by a dummy variable if there was loss in the period, to measure their financial difficulty. This is one of the most tested variables in literature according to Hay *et al.* (2006). It is expected that the loss variable show a positive relation with the audit fees (Simunic, 1980; Hay *et al.* 2006; Wahab *&* Zain, 2013; Desir *et al.*, 2014).

The greater the complexity of a client, the more difficult the audit will be and more hours will be used to complete the service (SIMUNIC, 1980). It is expected a positive relation between the audit fees and the audited company's complexity (Hay *et al.*, 2006). The greater the decentralization and diversification of companies operation's, more audit efforts and time are required for the audit (CHEUK, 2006).

Literature has represented the auditing complexity on different ways in the model of determining fees.Among the most used models are: number of subsidiaries (Simunic, 1980; Goodwin & Wu, 2014, Cameran *et al*., 2015); number of foreign subsidiaries (Craswell & Francis, 1999; Hay *et al*., 2006; Goodwin & Wu, 2014); the audited company's sector (Hay *et al*., 2006); and, total assets abroad (Hay *et al*., 2006). According to Hay *et al.* (2006), the most used variables to measure the audited companies' complexity are the number of subsidiaries and the number of subsidiaries abroad.

We used the model as a proxy for complexity the SUBSD variable, represented by a dummy variable for the existence of subsidiaries, and SUBSFD, represented by a dummy variable for the existence of foreign subsidiaries. And, we used the REST variable, which indicate that there are restructuring operations in the company, including acquisition, merge or incorporation, similar to the one adopted by Camargo *et al.* (2011) and Pierri Junior *et al.* (2016).

BIGF is a variable that explains the quality of the audit firm. Singhvi (2014) asserts that shareholder could express discontent when a company hires an audit firm with lesser expertise and lesser brand name than the outgoing auditor. And the audit firms that are smaller and lack brand name are often recognized as lower quality. Then, BIGF is a variable adopted to observe if the audit firm is a higher brand name and carried out the auditing in the last year of exercise. The seller of a high audit quality has a motivation to signal the quality of the product to the buyer to rationalize the higher price. It is expected that the BIGF variable has a positive signal in relation to the fees (Castro *et al*., 2015; Pierri Junior *et al*., 2016).

4. ANALYSIS AND RESULTS OF RESEARCH

In Table 2, the numeric variables investigated in this study are presented. They are Audit Fees (AF), Total Assets (TA), General Liquidity (LIQT) and Inherent Risk (RISCI).

Table 2
Descriptive Statistics of the model of variables

Variables	*Obs.*	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
HON	1490	8000,00	24879347,50	974223,4293	2252858,25707
TA	1490	35,00	793375000,00	9688969,9011	44078947,17413
RISCI	1490	,00	1,00	,2043	,18636
LIQT	1490	,02	1117,00	6,1998	74,33276

Source: Research Data

The four variables presented were transformed into their natural form logarithm to decrease the variability between companies. LIQT, which represents general liquidity, presented a considerable standard deviation in 2012, due to the fact that one of the companies has different liquidity.

The Inherent Risk variable (RISCI) points out that, on average, the companies that compose the sample hold 20% of the value of the asset composed of values of inventories and accounts receivable.

In Table 3, the frequency of dummy variables investigated in this study is presented.

Table 3
Frequency and percentage of dummy variables

Variables	*2010*		*2011*		*2012*		*2013*		*2014*		*Total*	
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
MANCH	12	0,8	13	0,9	152	10,2	31	2,1	24	1,6	232	15,6
VOLCH	15	1,0	19	1,3	16	1,1	20	1,3	16	1,1	86	5,8
LATCH	21	1,4	22	1,5	147	9,9	42	2,8	32	2,1	264	17,7
BIGCH	5	0,3	5	0,3	6	0,4	2	0,1	4	0,3	22	1,5
SMLCH	1	0,1	5	0,3	15	1,0	7	0,5	4	0,3	32	2,1
SUBS	216	14,5	233	15,6	245	16,4	239	16,0	220	14,8	1153	77,4
SUBF	84	5,6	84	5,6	92	6,2	88	5,9	84	5,6	432	29,0
RESTR	53	3,6	53	3,6	61	4,1	61	4,1	31	2,1	259	17,4
LOSS	57	3,8	73	4,9	96	6,4	89	6,0	90	6,0	405	27,2
BIGF	224	15,0	238	16,0	234	15,7	226	15,2	212	14,2	1134	76,1

Source: Research data

During the period of this study, it was observed in Table 3 that 232 companies changed audit firms due to a legal enforcement imposed by CVM Instruction No. 308/1999. However, the voluntary changes totalized 86 changes during the five years analyzed. The lateral changes represented approximately 20% of all the observations. On the other hand, the changes from top to bottom or from bottom to top were around 2% of the total observations. The mandatory changes took place mainly in 2012 due to the coincidence of the beginning of the rotation and the end of the expanded limit given by the government to adapt IFRS and audit firms (2 more years in 2010 and 2011).

It was noted from the descriptive statistics that around 76% of the audits were performed by the audit firms that dominate the world and also the Brazilian market, the Big-Four. As for the variables used as a proxy for complexity, in approximately 77% and 29% of the observations, the existence

of foreign and foreign subsidiaries, respectively, was observed. In relation to the REST variable, it was found that in about 20% of the observations, companies underwent restructuring operations in the 5-year period of the study.

In Table 4, the panel data model for LnAF variable is presented. Breusch-Pagan's test (Table 3) demonstrates that the panel data model is appropriate for data analysis, as its result indicates that there are statistically significant differences between companies throughout the years. F-Chow's test also indicates the rejection of the intercept and bend equality hypothesis reinforcing the inadequacy of the POLS model. The Hausman's test result supports the hypothesis that the random effect model provides more consistent parameters' estimates.

Table 4
Panel Data Model – dependent variable LnHON

Model: Fixed-Effects for companies and years
Dependentvariable: l_HON
Robust Standard Errors

Variable	*Signal Esp.*	*Model (1)*				*Model (2)*			
		Coef.	*Std.Error*	*T*	*P-Value*	*Coef.*	*Std.Error*	*t*	*P-Value*
Const		8,5730	1,135	7,551	0,000	8,513	1,149	7,406	0,000
l_TA	+	0,2497	0,082	3,062	0,002	0,252	0,082	3,054	0,002
l_RISCI	+	-0,0662	0,027	-2,445	0,015	-0,069	0,028	-2,449	0,014
l_LIQT	+	-0,1211	0,093	-1,306	0,192	-0,116	0,096	-1,213	0,225
SUBS	+	0,1009	0,138	0,729	0,466	0,090	0,142	0,638	0,524
SUBF	+	0,1121	0,078	1,435	0,151	0,104	0,080	1,299	0,194
RESTR	+	0,0475	0,039	1,209	0,227	0,042	0,040	1,056	0,291
LOSS	+	0,0028	0,051	0,055	0,956	0,002	0,051	0,030	0,976
BIGF	+	0,6008	0,115	5,209	0,000	0,647	0,139	4,649	0,000
MANCH	-	-0,2506	0,028	-8,935	0,000				
VOLCH	-	-0,0814	0,065	-1,247	0,212				
LATCH	?					-0,227	0,028	-8,012	0,000
BIGCH	?					-0,224	0,165	-1,358	0,175
SMLCH	?					-0,058	0,106	-0,549	0,583
Observations			1418				1418		
R^2Within			0,175				0,172		
R^2 Geral			0,933				0,933		
Estatística F			48,658				48,263		
Sig.			0,000				0,000		

Note: Model (1) - the mandatory change variables (MACH) and the voluntary change (VOLCH); Model (2) – considers the lateral change variables (LATCH), bottom to top change (BIGCH) and top to bottom change (SMLCH).

Thus, according to Cameran *et al.* (2015) the model of fixed effects was used to be able to control the systematic variations along the time. Two models were carried out. The first one (Model 1) with the mandatory change variables (MANCH) and voluntary change (VOLCH), and the second one (Model 2) with these types of firm switch: Lateral (LATCH); bottom to top change (BIGCH); and top to bottom (SMLCH).

From the F Test, considering the 99% confidence level, it can be stated that the model is significant. The explanatory capacity of the model is high, from general R^2 of 0,933, indicating that approximately 93,3% of the behavior of the audit fees is explained by the variables included in the model.

The variables l_TA, BIGF and MANCH are significant to the level of 1% and the variable l_RISC to the level of 5% in model (1). l_TA was significant as in the Brazilian studies of Camargo *et al.* (2011), Hallak and Silva (2012) and Castro *et al.* (2015). This variable was also significant in the international studies of Cameran *et al.* (2015) and Coberlla *et al.*(2015). It is noticed that, as Köhler and Ratzinger-Sakel (2012) show that bigger companies (l_TA) and audited by *Big-Four* firms (BIGF) have higher audit fees.

The BIGF variable was significant in the Brazilian studies of Camargo *et al.* (2011),Castro*etal.*(2015), Vogt *et al.* (2015) and in the international studies of Cameran *et al.*(2015) and Coberlla *et al.* (2015). The audit performed by a company that the literature has considered to be of superior quality may result in higher audit fees, which can be measured based on the characteristics of the audit firms: being a Big-N or a firm with expertise in the sector (Hay *et al.* 2006). This significance that has been observed in these studies is the result of this premium perceived by customers and paid for by them.

Despite the inherent risk variable (l_RISC) being significant at the level of 5% in both models (1 and 2), the result differs from that expected by the literature. It was observed that the higher the inherent risk is, the lower the audit fees are. This result differs from the results found in the literature, as Hay *et al.* (2006) assert on about 84% of the studies with this same variable reported a positive significance between audit fees and inherent risk.

In model (1), the MANCH variable was significant to the level of 1%. This result is consistent with Cameran *et al.* (2015) and Coberlla *et al.*(2015) that found discount in mandatory audit firm changes in Italy. The discounts represented about 25% in this research. This discount is significant for the

sample studied and it is similar to that found by Ettredge and Greenberg (1990) and Simon and Francis (1988), only related to all types of changes (not (not only related to the mandatory ones). This result conflicts with Kwon, Lim and Simnett's (2014) that observed the increase on fees in the periods of post-regulation of audit rotation; however, this study was carried out in South Korea and the audit firm characteristics and the companies may diverge from Brazil's reality.

In addition, the results related to the voluntary changes are similar to those obtained by Cameran *et al.* (2015) and Coberlla *et al.*(2015) that did not find evidence on the audit fees variation. On the other hand, Kwon *et al.* (2014) found evidence of discount on fees by the time of the rotation regulation in South Korea for part of the companies on the voluntary changes.

Thus, the results support **H1a** hypothesis,that the companies that mandatorily changed their audit firm's pay have in the initial year of relationship a lower amount of audit fees. The competition among the audit firms may be one of the factors involved in these fees decrease. However, the results do not support **H1b,** that the companies that voluntarily changed their audit firm lower fees in the initial year. In the reference form only two voluntary changes were informed as reason to be cost reduction for the hiring company; thus, it is suggestive that the other changes may occur by several reasons that are not related to the search for a lower amount of audit fees, which may be the quality audit, efficiency, disagreements between auditors and customers, among others.

In model (2), when analyzing the kinds of audit firm changes, it was noticed that the LATCH variable is significant to the level of 1%. The lateral change of audit firm represented a discount of about 20% in the audit fees. This discount may be the result of the competition among audit firms of the same size driven by the mandatory switch that end up competing among themselves. The fact that the non-lateral changes not representative both in the model and in relation to the changes observed in the sample (3.6%), is due to the fact that the predominance of Big-Four firms, the companies that are audited by non-Big-Four are usually small companies tend to remain audited by them. When there is a change in the quality of audit, be ita change for a Big-Four or non-Big-Four, in Brazil, it was verified the discount mitigation on audit fees. This result is similar to Ghosh and Lustgarten's (2006) that observed discount in lateral firm changes; however, they found higher audit fees in the changes between non-Big-Four firms to non-Big-Four than in changes from Big-Four to Big-Four.

Thus, the **H2a** hypothesis is supported, when companies that laterally changed their audit firm have lower audit fees in the first year of relationship. On the other hand, **H2b** hypothesis is rejected because of the insignificance to the level of 5% on audit firm changes, from top to bottom or from bottom to top. Regarding the lateral audit firm changes, the results differ from the international studies of Cheuk (2006) and Kasai (2009), which were not significant in these types of change. And also, it diverges from Craswell and Francis (1990) that found discount on fees only on non-Big-Four to Big-Four firm changes. The differences occurred may be provoked by the differences between the Brazilian audit market and other countries' market. Only 1.5% of the changes occurred were from non-Big-Four to Big-Four and the experimental effect of quality mentioned by Craswell and Francis (1990) did not occurred in this market.

5. CONCLUSION

The objective of this study was to observe if the behavior of audit fees is affected during the audit firm switch in the period of 2010-2014. In order to verify the fees over time, it was necessary to use the regression with data in panel, with two models for audit firm switch analyses, in which the fees dependent variable is explained by a set of 10-11 variables.

The study helped to identify how the types of switching by audit firms (mandatory versus voluntary exchanges and lateral versus non-lateral exchanges) affected the audit fees. We observed different results in studies on audit fees in different countries in the international literature. And, so far, this relationship has not been studied in emerging countries like Brazil. This constitutes the gap addressed in this study.

The results found for the sample investigated of Brazilian companies support the **H1a** hypothesis, of which the companies that had a mandatory audit firm rotation paid lower audit fees in the first year of relationship. The mandatory audit firmsrotation and the competition, which is the consequence of this effect, triggered audit fees discounts in the first year of contract between the company and the audit firm. The fees discounts could be the consequence of a higher efficiency of subsequent auditors; however, this contradicts what is pointed by literature about the need of new procedures and familiarization with the audited company, which would result in extra costs. Therefore, this result is possibly because of the competition among firms, once there is coincidence in the firm change period (2012).

The findings do not support the **H1b** hypothesis, because the voluntary changes were not significant to explain the audit fees variation. One possible

reason is that in general, companies change audit firms voluntarily due to misunderstandings with the audit firm or in search of a better quality in service. Thus, the companies inserted in this situation end up opting to pay higher fees instead of searching for audit cost reduction. For instance, from the sample studied, only two companies informed that are changing audit firms to reduce fees cost.

The lateral audit firm change represented a discount of 20% in audit fees. One of the reasons for this discount may be the result of competition between audit firms of the same size that, driven by mandatory rotation, end up competing with each other. Furthermore, the rotations involve non-Big-Four to Big-Four or big-four to non-Big-Four didn't changed de audit fees.

In addition, it was noticed that the control variables, among them the company size (l_TA), inherent risk (l_RISCI) and the kind of audit firm (BIGF), which are generally adopted in literature, contribute to explain how the audit fees behave in Brazil.

The discounts found in this survey for mandatory audit firm changes should be interesting to regulators in Brazil, to avoid this intense competition and possible losses in the audit quality. Assessments of whether we are in the right way with the adoption of mandatory rotation or whether we should adopt other control mechanisms to ensure audit effectiveness should be evaluated by regulators. New experiences, like the audit partner rotation in Europe, can help to discuss this issue of the mandatory caster.

It is worth mentioning that the results are limited to the companies and the period of time investigated. In addition, because it is an empirical approach, it is likely that possible variables that help to explain the audit fees behavior have been omitted in the model adopted. As a suggestion for further research, new studies should investigate the effect of audit quality and subsequent fees to evaluate the impact of the switch in Brazil,and verify the impact of audit switch and the voluntary firm changes in the auditing quality.

References

Butterworth, S. & Houghton, K.A., (1995). Auditor switching: The pricing of audit services. *Journal of business Finance & Accounting*, 22 (3), pp. 323-344.

Bhattacharya, A. & Barnerjee, P. (2020). An empirical analysis of audit pricing and auditor selection: evidence from India. *Managerial Auditing Journal*, 35 (1), pp. 111-151.

Camargo, R.V.W.C.,Pepinelli, R. de C.C., Dutra, M.H., & ALBERTON, L., (2011). Fatores determinantes do Comportamento dos custos com auditoria independente nas

empresas negociadas na BM & FBOVESPA. PaperdPresentedattheXVIII Congresso Brasileiro de Custos, Rio de Janeiro, Brasil.

Cameran, M., Francis, J.R, Marra, A., & Pettinicchio, A., (2015). 'Are There Adverse Consequences of Mandatory Audit Rotation? Evidence from the Italian Experience. Auditing: *A Journal of Practice & Theory,* Vol 34 (1), pp. 1-24.

Castro, W.B de L.,Peleias, I.R., & SILVA, G.P. da. (2015). Determinantes dos honorários de auditoria: Um estudo nas empresas listadas na BM & FBOVESPA. Revista Cont. - Finanças -USP,26 (66),pp.261-273

Cheuk, M. C., (2006). Auditor rotation versus audit partner rotation: An examination of auditquality, audit pricing and audit report lag in Australia. 106 f. Unpublished Ph.D. Thesis.Programa de Pós-graduação da CityUniversityof Hong Kong, China.

Coberlla, S.,Floria, C., Gotti, G., & Mastrolia, S. A.,(2015). Audit firm rotation, audit fees and audit quality: The experience of Italian public companies. *Journal of International Accounting, Auditing and Taxation,* 25 (C), pp. 46-66.

Craswell, A.T., & Francis, J.R. ,(1999). Pricing initial audit engagements: A test of competing theories'. *The Accounting Review,* l74 (2), pp. 201-216.

Comissão de Valores Mobiliários., (1999). Instrução CVM nº 308, de 14 de maio de 1999. availableat:<http://www.cvm.gov.br >.

Deangelo, L. E., (1981). Auditor independence, "low balling", and disclosure regulation, *Journal of Accounting and Economics* 3(2), pp. 113–127.

Deis, D.R., & Giroux, G., (1996). The effect of auditor changes on audit fees, Audit hours, and audit quality**.** *Journal of Accounting and Public Policy,* 15 (1), pp. 55-76.

Desir, R.,Casterella, J.R., & Kokina, J. (2014). A reexamination of audit fees for initial audit engagements in the post-SOX period, Auditing: *A Journal of Practice & Theory,* 33 (2), pp. 59-78.

Dye, R. A., (1991). Informationally motivated Auditor replacement. *Journal of Accounting and Economics,* 14 (4), pp. 347-374.

Ettredge, M., & Greenberg, R., (1990). Determinants of fee cutting on initial audit engagements, *Journal of Accounting Research,* 28 (1), pp.198-210.

Francis, J.R., (1984). The effects of audit firm size on audit prices: A study of the Australian market. *Journal of Accounting and Economics,* 6 (2), pp. 133-151.

Ghosh, A, & Lustgarten, S., (2006). Pricing of initial audit engagements by large and small audit firms, *Contemporary Accounting Research,* 23(2), pp. 333-368.

Goodwin, J., & Wu, D., (2014). Is the effect of industry expertise on audit pricing an office-level or a partner-level phenomenon? *Review of Accounting Studies,* 19(4), pp. 1532-1578.

Gregory, A., & Collier, P., (1996). Audit fees and auditor change: an investigation of persistence of fee Reduction by type of change, *Journal of Business Finance & Accounting,* 23 (1), pp. 13-28.

Hai, P. T., (2019). Effect of audit rotation, audit fees and audit competence to motivation auditor and audit quality: Empirical evidence in Vietnam, *Academy of Accounting and Financial Studies Journal,* 23 (2) p. 1-14.

Hay, D., (2012). Further evidence from Meta-Analysis of audit fee research, *International Journal of Auditing,* 17(2), pp. 162-176.

Hay, D., Knechel, W., & Wong, N., (2006). Audit fees: a meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research,* 2 (1), pp. 141-191.

Hallak, R., & Silva, A., (2012). Determinantes das despesas com serviços de auditoria e consultoria prestados pelo auditor independente no Brasil. R. Cont. Fin. – USP, .23 (60), pp. 223-231.

Holm, C., & Thinggaard, F., (2014). Leaving a joint audit systemm: Conditional fee reductions', *Managerial Audit Journal,* 29 (2), pp. 131-152.

Huang, H., W., Raghunandan, K., & Rama, D. V., (2009). Audit fees for initial audit engagements before and after SOX, Auditing: A Journal of Practice *&* Theory, 28 (1), pp. 171-190.

Jensen, M., & Meckling, W., (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics,* 3 (4), pp. 305-360.

Karim, A.K.M.W, & Moizer, P., (1996). Determinants of audit fees in Bangladesh. *International Journal of Accounting,* 31(4), pp. 497-509.

Kasai, N., (2009). Theeffects of auditor change on audit fees: Empirical evidence from Japan. (2009). *Journal of International Business Research,* 8 (Suppl. 2), pp. 17-28.

Köhler, A.G., & Ratzinger-Sakel, N.V. S., (2012). Audit and non-audit fees in Germany: The impact of audit market characteristics, Schmalenbach Business Review, 11, pp. 281-307.

Krauß, P. ,Quosigk, B. M, & Zülch, H., (2014). Effects of initial audit fee discounts on audit quality: Evidence from Germany. *International Journal of Auditing,* 18 (1), pp. 40-56.

Kwon, S., Y., Lim, Y., & Simnett, R., (2014). Theeffect of mandatory audit firm rotation on audit quality and audit fees: Empirical Evidence from the Korean audit market. *Auditing: A Journal of Practice & Theory.* 33(4),pp.167-195.

Lennox, C., (2005). Management ownership and audit firm size. *Contemporary Accounting Research,* 22(1), pp. 205-227.

Martinez, A. L., & Moraes, A. J., (2014). Association between independent auditor fees and firm value: A study of Brazilian public companies. *Journal of Modern Accounting and Auditing,* 10 (4),pp. 442-450.

Munhoz, T. R., Murro, E. V. B., Teixeira, G. B., & Lourenço, I., (2014). O impacto da adoção obrigatória das IFRS nos honorários de auditoria em empresas da Bovespa. PaperPresentedattheXIV Congresso USP Controladoria e Contabilidade, São Paulo, SP, Brasil.

Palmrose, Z., (1986). Audit fee and auditor size: Further evidence, *Journal of Accounting Research,* 24(1), p. 97-110.

Pierri Junior, M. A., Pepinelli, R. de C.C., & Alberton, L., (2016). Comportamento dos honorários de auditoria na troca da firma de auditoria ou sócio responsável. Enfoque Contábil, 35(3), pp.19-32.

Pratoomsuwan, T., (2017). Audit prices and big 4 fee premiums: further evidence from Thailand, *Journal of Accounting in Emerging Economies*, 7 (1), pp. 2-15.

Simon, D.T., & Francis, J. R., (1988). The effects of auditor change on audit fees: Test of price cutting and price recover. *The Accounting Review,* 63 (2), pp. 255-269.

Simunic, D.A., (1980). The pricing of audit services: Theory and evidence. *Journal of Accounting Research*, 18(1), pp. 160-190.

Singhvi, A., (2014). Three essays on auditor industry specialization. 113 f. Unpublished Phd Thesis Programa de Pós-graduação da The University of Texas at el Paso.

Turpen, R.A., (1990). Differential pricing on auditors' initial engagements: Further evidence. *Auditing: A Journal of Practice & Theory*, 9(2), pp. 60-76.

Villiers, C. de., Hay, D., & Zhang, J., (2014). Audit fees Stickiness. *Managerial Auditing Journal*, 29(1), pp. 2-26.

Vogt, M., Leite, M., Cunha, P. R. da, & Santos, V. dos., (2015). Relação entre Honorário de Auditoria e Não Auditoria com o Resultado Econômico financeiro das Empresas Listadas na BM & FBOVESPA'. Contabilidad y Negocios, 19(10), pp. 67-84.

Wahab, E.A.B.A., & Zain, M.M., (2013). Audit feesDuring initial engagement in Malaysia'. *Managerial Auditing Journal*, 28(8), pp. 735-754.

Watts, R.L., & Zimmerman, J.L. (1983). Agency problems, auditing, and the theory of the firm: some evidence'. *Journal of Law & Economics*. 26(3), pp 613-633.

Whisenant, S., Sankaraguruswamy, S., & Raghunandan, K., (2003). Evidence on the joint determination of audit and non-audit fees, *Journal of Accounting Research*, 41(4), pp. 721-744.

Zerni, M., (2012). Auditpartner specialization and auditfees: Some evidence from Sweden. *Contemporary Accounting Research*, 29(1), pp. 312-340.