AN ANALYSIS OF EXTERNAL AUDIT PRACTICES IN AGRICULTURAL COOPERATIVES IN BRAZIL[1]

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Abstract
The aim of this research is to analyze corporate governance practices for monitoring mechanisms considering (a) fiscal board; (b) external audit; and (c) internal audit. We verified the how close agricultural cooperatives are in adopting best corporate governance practices indicated in the codes. As theoretical framework, we use the property rights theory and the perspective of the firm as a contract nexus, and the so called separation of ownership and management. We analyze theoretically the motivations to adopt corporate governance structures for monitoring. For this, is applied a methodology that use a questionnaire based on IBGC – Brazilian Institute of Corposrte Governance and OECD O…..- best practices codes. The level of reliability measured using the Cronbach's Alpha is 0,77. Results suggest that there is tendency of adopting those practices which are based on cooperative law for the 28 cooperatives studied. The paper concludes..
Key words: *corporate governance practices; monitoring mechanisms; agricultural co-operatives*

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1Introduction

According to Hansmann (1996), the owners of a firm are those who share two formal rights: the formal right to control the firm (i.e., the decision right) and the right to the residual earnings (i.e., the right to the net gains).

As cooperatives are collectively owned organizations, the right to control is exercised by the General Assembly and delegated to two bodies elected by the other owners, namely the Board of Directors (responsible for making operational decisions) and the Supervisory Board (responsible for monitoring).

In general, the Board of Directors, composed of cooperative members, may also delegate part of the right of control to the managers. In this context, an agency relationship occurs in two forms: (a) the General Assembly assumes the role of the principal (primary agent), and the Board members function as agents; and (b) when the Board of Directors delegates part of the decision-making power to the managers, it becomes the principal and the managers become agents.

Thus, in a context in which there is an agency relationship and therefore agency costs, monitoring mechanisms such as external audits become necessary to potentially minimize these costs.

According to Craswell, Francis, and Taylor (1995), there is a combination of specific factors in the firm such as its ownership structure and financing, as well as specific transactions and contracts that determine both the structure of agency costs and the demand for monitoring.

As highlighted by Anuchitworawong (2010), monitoring mechanisms are important factors for helping to reduce the concerns of investors regarding expropriation. According to Siqueira (2011), analyzing the governance practices indicated by the code of corporate governance of the Brazilian Institute of Corporate Governance (IBGC) for monitoring mechanisms such as internal and external audits and supervisory boards, it was verified that a set of practices to the Supervisory Boards were not adopted by most of the cooperatives boards studied indicating that this mechanism do not act in a ex-ante decision-making process. Among other findings, it is cited that (a) only one-third of the supervisory boards of agricultural cooperatives discuss opinions prior to making investments and that (b) 41% of the supervisory boards do not meet to analyze the actions of the board of directors, being even possible in some cooperatives to hold meetings in the presence of the board of directors, thus hindering their performance.

Regarding the practices analyzed with respect to the external audit, it was verified by the study that one-third of the cooperatives studied do not hire external auditors and that in 80% of the cooperatives, the supervisory board does not participate in contracting external auditors, even though it is their legal responsibility to give opinions on the financial statements. A total of 40% of cooperatives reported hiring a firm to perform only financial audit. In addition, it was found that approximately 75% of the cooperatives do not have internal audits and that only 14.81% maintain a flow of information between the internal auditing department and the supervisory board. These findings together may affect the governance structure of agricultural cooperatives (SIQUEIRA, 2011).

Thus, considering the external audit as a monitoring and enforcement mechanism in the cooperatives, the objective of this study was to determine the characteristics of the external audit as a monitoring mechanism in agricultural cooperatives in Brazil.
Therefore, the specific aims of the study were the following: (i) theoretically analyze the relationship between accounting firm size and the quality of audit services; (ii) verify the level of accreditation of accounting firms by the OCB; and (iii) analyze the representation of large and small accounting firms in the context of agricultural cooperatives.
For purposes of this study, we analyze the characteristics of accounting firms providing audit services to the cooperatives, the practice of rotating accounting firms indicated by the code of governance of the IBGC, and their accreditation with the OCB.

2 Theoretical Reference

2.1 Agricultural cooperatives: governance and monitoring

In a cooperative, the activities depend on the private property of each of its members, who are owners that collectively own and use the property and the services of the cooperative. This duality means that investment decisions in these organizations are made to meet the needs of members of the cooperative (i.e., the owners), thus, making the definition of its objective function becomes more complex (Enke, 1945). According to Rhodes (1983), the residuals rights of the cooperative members are proportional to the volume of business that is maintained with the cooperative, and not based on their shared capital quota.
According to Bialoskorski Neto (2008, p.17), "as there is no separation between ownership and control in cooperative ventures, and the associate is both, user and owner of their business, the cooperative may be conducted to a state of inefficiency." Thus, to discuss the separation of ownership and control, one should take into account the fact that the strategic decisions of cooperatives may be influenced by the particular needs of members and that economic decisions can be influenced through both the votes of the members in the assembly and the decisions that are made by the board of directors, as the boards are composed of members.
It thus appears that the particular characteristics of a cooperative's ownership structure are reflected in its governance structure. For example, councils are formed by members, while literature indicates that, ideally, governance should involve independent directors (COLIN,2007).

2.2 Decision-making processes and monitoring in cooperatives

In cooperatives, the board of directors and the supervisory board are formed by cooperative members, and these owners represent the risk-takers in the decision-making process. These members can transfer the right of formal decision control to the board of directors elected by the General Assembly. The board of directors can then delegate decisions to the executive management of the organization (COSTA, 2010). This situation results in the separation of agents responsible for taking risks from those that manage risk.
The separation of ownership and management leads to agency problems that arise from the differences of interests between contracting parties. In this case, the manager is considered the agent based on agency theory literature, and the owners are the principals. The fact that contracts are not written and performed without costs, gives rise to agency costs such as those associated with monitoring, gathering, and structuring contracts involving agents with different interests (FAMA; JENSEN, 1983).

The control of agency problems in the decision-making process is important when decision managers (those who initiate and implement decisions) are not the main holders of residual rights and therefore do not suffer as much from the effects of their decisions.
In a complex organization where different agents hold key information for the decision-making process, the fact that managers have greater access to other agents, create the tendency of the managers have more access to information relevant to decisions than the owners. Therefore, a situation is established in which there is information asymmetry. According to the behavioral assumptions adopted in the theories of agency and property rights, in which the agent tends to act to maximize his/her own interests, there are good reasons to suppose that the available information can be used to make decisions that expropriate the owners' wealth and promote his/her own interests.
Considering the behavioral assumptions cited above, it is possible to understand the need for owners to monitor management in situations where there is information asymmetry in an organization's decision-making process. Thus, it is important to analyze the role and purpose of the audit as a mechanism of corporate governance.

2.3 Incomplete contracts and property rights
As noted by Hart (1988), contracts are incomplete due to the fact that all the actions that parties are supposed to perform to meet their obligations are not covered by any clause, as well as to the fact that it is not even possible to foresee all of the contingencies of reality. Thus, there are contract gaps or flaws. As events occur that are not specified in the contract, the parties tend to act differently than specified, or they may even disagree about the real meaning of what appears in the contract. This may result in the need to revise the contract or even to resolve contract disputes through the judgment of a third party (e.g., a court).
There might also be *ex-post* inefficiencies in the contract, as in the case of information asymmetry. As noted by Hart and Moore (1998), *ex-post* inefficiencies occur because agents participating in the contract (insiders) obtain private information about their individual preferences. The information asymmetry also occurs because certain contingent claims are not viable in the drafting of the contract because the real world is not observed in the same manner by all parties to the contract.
Rajan and Zingales (2000) emphasize that if the agents could write contracts in which all contingencies could be covered and ensure that these contracts are not renegotiable, the allocation of power would not be a relevant issue; all decisions would have been previously addressed, and the legal system could enforce such a contract without exercising the power of control. However, because the contracts do not include all contingencies, organizations have to constantly negotiate rights and obligations, and the allocation of the power of control therefore affects the negotiation of unforeseen situations.
The same authors consider that, from a traditional perspective, the main objective of corporate governance is to maximize shareholder value. Thus, the manner in which the right to control and the right to make decisions are allocated among assets (i.e., how the asset should be 'governed') must correspond to a governance structure that allows for the limitation and coordination of the power of control delegated to the agents. This would allow the owners to monitor the agents' actions, avoiding decisions that expropriate their wealth.
Seal (1996) points out that both the impossibility of describing all possible contingencies in a contract and the trade-off between costs and benefits related to contract completion, require that parties participating in the agreement have some flexibility in determining the accounting

numbers and audit verification. Thus, accounting and auditing may initially be better understood in the context of relational contracts rather than formal contracts.
According to Baker, Gibbons, and Murphy (2001), relational contracts are informal agreements that are backed by the value of future relationships between the participating parties. For them, relational contracts between and within firms help to overcome the difficulties in formal contracting (e.g., the prohibitive costs of specifying *ex-ante* clauses related to the results of the transaction).
Such contracts allow parties to utilize their specific knowledge of the situation and, if possible, to adapt to new information as it becomes available. The fact that transactions cannot be judged by a third party makes relational contracts 'self-enforcing' (i.e., the future value of the relationship between the parties is valuable enough that neither side wants to default on the agreement).
As highlighted by Bialoskorski Neto (2004. p.61), "in cooperative organizations, when employees or other agents can decide on how to use the assets without a clear formal contractual rule, residual rights of control occur". This residual right of control implies the need for governance mechanisms of monitoring, such as external audits.
According to Seal (1996), accounting and auditing should be seen as intimate aspects of the theory of contracts because it can be shown that different financial instruments, including equity investment, require different monitoring requirements. Thus, auditing presents a special role in the completeness of ownership contracts to the extent to which it has a role to arbitrate the determination of revenues and dissemination of information. Auditing provides relational contracts with information from past periods and projections about future transactions over time.
Considering the difficulty in modeling/adjusting the contract of auditors into a contract in which only two parties are involved for a single period, the incentive for auditors to preserve their independence stems from the fact that they are involved in a relational contract with a large number of owners. Thus, they want to maintain their reputation for commercial reasons, as well as avoid legal and regulatory restrictions.
In addition, in a relational contract between auditor and client, the incentives for the auditor to maintain the relationship over time include the facts that the customer constitutes a portion of the revenue and that this relationship does not incur initial audit costs. These costs were incurred in previous periods and now represent quasi-rents to the auditor (DeANGELO, 1981).
As noted by Levin (2003), relational contracts are 'self-enforcing' and cannot be formally judged by a third party, which affects the provision of incentives to the parties.
Considering the future benefits arising from the relationship between auditor and client (e.g., revenues in the period, quasi-rents, maintenance of contracts, warranty, reputation), the 'self-enforcing' characteristic of relational contracts can change the incentives for auditors to act more or less independently.

2.4 Audit and corporate governance mechanisms

As noted by Brown and Caylor (2004), effective corporate governance reduces the control rights conferred to managers by shareholders and creditors, increasing the likelihood that managers will invest in viable projects, suggesting that better governed firms have better operational performance.
In the case of cooperatives, the law 5764/71 (Brazil, 1971) provides some standards for governance mechanisms, such as the requirement that boards of directors and supervisory

boards are formed by members. In the cooperative, the conflicts of agency occur between members and managers who may have different goals and will act in their own interest when they have the opportunity (BIALOSKORSKI NETO, 2008). These opportunities tend to occur in cooperatives with a poor governance structure, characterized by the absence of effective monitoring mechanisms and discipline.

From a contractual perspective, Watts and Zimmerman (1983) argue that the auditing of management by an independent party reduces problems of agency, originating from the fact that the firm's managers (agents) are not holders of the residual rights of the firm.

According to Braunbeck (2010, p.33), in the context of information asymmetry and conflict, independent auditors act as informational intermediaries. As noted by the author, in a situation in which there is a conflict of agency, the enforcement of contracts requires monitoring, whereby the role of the accounting firm is to reduce opportunistic behavior, as they are able to identify and report breaches of contract.

According to Imhoff, Jr. (2003), accounting, auditing, and governance structure are components in the flow of information to market participants.

As noted by Al-Ajmi (2009), audit services play an important role in reducing information asymmetry, as well as in mitigating agency problems between managers and shareholders and between shareholders and creditors. However, the same author believes the auditor's role will only be fulfilled if the audit opinion agrees with what had been found by auditors during the development of their work.

According to Cohen *et al*. (2002), when certifying financial reports, auditors participate significantly in the monitoring system of the organization and are also considered an essential component of the corporate governance mosaic, as they monitor the quality of the process of financial reporting.

According to the IBGC (2009, p.59), "every organization must have its financial statements audited by an independent external auditor."

According to Joshi *et al*. (2009), as the size and complexity of organizations increase, external auditors are viewed as a mechanism by which to provide greater assurance of the information provided by contributing to the process of decision-making and reducing the possibility of innocent mistakes regarded as fraud and manipulation. Considering that the information provided by the companies has economic and social consequences for various parties, external auditors are required to minimize disputes.

Watts and Zimmerman (1983) argue that the enforcement of contracts requires the monitoring of management activities. They state that an audit will only be successful in changing expectations and thus reducing the cost of opportunistic behavior (agency costs) caused by managers if it is expected that auditors will report breaches of contract.

As noted by Moore *et al.* (2006), the condition of independence requires that audits be conducted without bias. In this sense, the condition of independence ensures a greater likelihood that auditors will discover faults and a higher probability that such failures will be reported. These conditions are also critical for identifying the independence of auditors, as this is important to the extent that the audit should provide reliable information for the decision-making process (DeANGELO, 1981).

Al-Ajimi (2009) considers that the auditors' independence factor stems from combining conditions such as the probability that the auditor will report possible breaches of contract, the ability to resist pressure from customers, integrity and reliability, and the lack of interest in creating unacceptable risks. Imhoff Jr.(2003) states that the independence of an auditor can be compromised if the auditor works alongside the manager or is concerned about losing the

customer.

2.5 Quality, size and the rotating accounting firms issue

DeAngelo (1981) argues that audit quality is not independent of the size of the accounting firm, as it changes the incentives of the auditor according to the number of clients it has.

The author's argument is based on the concept of quasi-rent in the provision of audit services. In her view, the quasi-rent earned by the accounting firm for a particular customer is the excess revenue over a certain period from the costs avoided during that period, including the opportunity cost of the implementation of the audit on the next best alternative. To Chan and Wu (2011), quasi-rent can be defined as the revenue from audit services that exceeds the costs.

Considering that the costs of initiating the provision of audit services are significant and impossible to avoid at the beginning of the services. Audit firm avoids incurring these costs of re-initiation when it maintains a customer for the next service period. The value of these avoided costs becomes a gain for the company in that second period (DeANGELO, 1981).

As noted by the author, the quasi-rent earned by providing services to a particular customer may be subject to loss if the audit service does not provide the quality expected by the client. The possibility of losing a client, as well as the consequent loss of the quasi-rent associated with this client, functions as a safeguard against opportunistic behavior by the accounting firm. Considering this possibility, the author argues that the greater the number of customers, the less incentive the auditors have to act opportunistically as the loss of a customer would have a lesser impact on their total quasi-rent. Thus, the auditors with a greater number of customers would tend to work more independently, resulting in a higher level of perceived audit quality.

DeAngelo (1981) indicates that, for comparative purposes, the revenue of a company with fewer clients is concentrated in these clients, and the loss of one represents a significant loss in the total revenue for the period. Then, quality of audit services is defined by two factors: (a) the market's assessment that a given auditor will likely find breaches in the accounting system and (b) the probability that the auditor will report these breaches. The first factor depends on the technological capacity of the auditor, the audit procedures employed, and the length of the sample, while the independence of the auditor is defined by the conditional probability that the auditor will report a discovered breach (failure).

In this sense, the quasi-rent of auditors who have a greater number of customers is less affected in cases of contract termination because the threat of the breach of contract on the part of the client does not affect a large proportion of its near-total income, and thus, the audit firm is not obligated to provide lower-quality services.

This argument is countered by Lennox (1999), who states that major accounting firms have more specific and significant revenues than small accounting firms, and thus, the loss of a customer is also significant with regard to the amount of revenue a particular customer contributes in total; this can then be related to the quality of audit services provided. In this sense, the relationship between quasi-rent and the quality of audit services can be analyzed by considering the extent of the accounting firm's portfolio of clients (the number of customers), as well as by the representation of a client as a percentage of the total revenue of the accounting firm.

With regard to audit quality and firm size, Braunbeck (2010) tests the following, among other hypotheses: (a) the larger the auditing firm, the higher the quality of services provided, and (b) the greater the degree of specialization of the accounting firm, the higher the audit quality.

The results showed that, according to the author and based on the construct used to measure audit quality, the two hypotheses are consistent with several empirical studies.

Parallel to the concept of quasi-rent, Chan and Wu (2011) consider the incentives that the major accounting firms have to ensure their reputation, as well as differences in the training of auditors and resources available to perform the services present in major accounting firms.

Lennox (1999) considers that the extent of resources that an accounting firm has (i.e.,its wealth) is correlated with the size of the company, as large companies have more incentive to prepare their reports precisely because of the risk of litigation involving significant sums of money.

Thus, given the concept of audit quality based on the ability of auditors to eliminate errors and manipulations in the results reported by firms, it is expected that large audit firms minimize the differences between actual results and those reported by the firm, given the resources and incentives that these audit firms possess (DAVIDSON; NEU, 1993).

In relation to the size of the audit firm, Reynolds and Francis (2001) argue that the fact that the accounting firm has several clients means that it does not rely on only one customer, and thus, while maintaining greater diversity, major accounting firms ensure that none of their clients are a significant source of revenue.

According to Silva (2010, p.17), the accounting firms that constitute the ‘Big Four’group (PricewaterhouseCoopers, Deloitte ToucheTomatsu, KPMG, and Ernst & Young) are “the most recognized and trusted in the Brazilian and world markets”. The author also highlights the importance of the BDO Trevisan firm to the Brazilian reality, considering that this is the fifth largest company.

Azizkhani *et al*. (2010) note that previous studies show that capital market participants value auditors who work for one of the four largest accounting firms differently from those who do not. According to the authors, the fact that audit quality is not directly observable leads investors to attribute audit quality to observable characteristics such as reputation, expertise, quality control, and training. These factors tend to cause investors to assign higher audit quality to the major accounting firms.

In Brazil, as indicated by instruction No. 308 of the Securities and Exchange Commission (CVM, 1999), as well as by the corporate governance code IBGC (2009), the rotation of accounting firms must take place within a maximum period of five years.

From studies on the mandatory rotation at determined times, it is possible to verify arguments indicating that the mandatory change of an accounting firm can possibly foster the independence of auditors, as well as arguments showing that such an imposition may not affect this condition, or even that other actions can maintain the independence of the auditor even if the auditor-client relationship is maintained for a longer period.

As noted by Jackson, Moldrich, and Roebuck (2008), those who advocate the rotation of accounting firms propose that the costs of possible corporate collapses that could have been avoided by a higher-quality audit would outweigh the increased costs of hiring a new auditor. From this perspective, a new auditor who is not already familiar with the client brings more objectivity, potentially increasing the quality of the audit.

Arruñada and Paz-Ares (1997) point out that the continuity of prolonged auditor-client relationships can create routine activities performed by the audit that ultimately can affect their competence. To the authors, the work conducted over a long period of time with the same customer may lead the auditor to place greater confidence in the work of previous years and thus lead them to treat the current project as a repetition of reviews conducted in previous years.

To that end, Jackson, Moldrich, and Roebuck (2008), who used different measures to assess the quality of audit services, stress that the quality of audit service is not affected by the length of service. Therefore, they argue that considering the initial costs associated with changing auditors, mandatory rotation would involve unnecessary costs with minimal benefits beyond the loss of specific knowledge of the auditors of its customers.
Arruñada and Paz-Ares (1997) argue that the mandatory rotation of auditors leads to a substantial increase in the total costs of an audit, both in terms of costs incurred by accounting firms, leading to higher prices of services, and in terms of costs incurred directly by the audited companies.
Among the explicit costs of initiating an audit, the costs incurred for the initial familiarization with the client's accounting procedures and initial analysis of the balance sheet can be cited. From the perspective of the client, the change of auditors and a new audit also involve explicit costs, such as the choice of a new accounting firm, and the need to provide resources for the preparation of the audit (ARRUÑADA; PAZ-ARES, 1997).
The authors also argue that the mandatory rotation destroys specific assets, such as the facilitation of communication between involved economic agents and the resolution of possible conflicts.
Thus, arguments such as overconfidence, a lack of objectivity, and the creation of routine audits support the mandatory rotation of accounting firms. However, factors such as a lack of incentives for differential investments in the accounting firms, the costs for initiating the audit work, and the loss of expertise acquired over time should also be considered in the imposition of the rotation of accounting firms.
This study focuses specifically on the implementation of the code of corporate governance of the IBGC (2009) and instruction No. 308 of the CVM (1999), specifying that the accounting firm should be changed at least every five years. Although the two agencies mentioned do not regulate cooperatives, the indications are treated here as indicated governance practices. The arguments, as well as favorable and unfavorable reasoning, are treated here from a theoretical and untested perspective.

2.6 Registration of accounting firms by the OCB

According to the OCB (1995, p.1), the independent audit is responsible for the analysis, advice, and opinion on administrative procedures to provide reliability to the cooperative partners during the decision-making process. The OCB, as the agency representing cooperatives, encourages the non-mandatory accreditation of accounting firms. This accreditation serves to demonstrate the experience of accounting firms for the purpose of facilitating the hiring process based on each firm's experience in a particular sector.
To this end, the OCB released a list of accredited accounting firms. The accreditation process involves the submission of documents that prove the experience that an accounting firm or auditor (individual) has in providing this service to cooperatives, as well as documents showing the regularity of audits by the accounting association.
The OCB, in turn, will confirm the experience of a firm through experience statements in cooperative audits contained in the curriculum. The OCB will also consult with the regional credit protection service and regional accounting associations to verify the information provided (OCB, 1995).
According to the norm, the State Organizations of the OCB monitor the audit work; if an abnormality is discovered, they can inform the cooperative and request the replacement of the accounting firm, as well as request the loss of accreditation. Once the accreditation approval

is obtained, the accounting firm may provide service to cooperatives for five years and, after this period, must then submit documentation with an updated date to submit to the new analysis.

3 Methodology and Results

A study is classified as exploratory "when there is no information about a particular subject and there is a desire to understand the phenomenon", while descriptive studies are used "when there is a desire to describe the characteristics of a phenomenon"(Richardson *et al.,* 2010, p. 66).
This research is characterized as exploratory and descriptive, as there is a desire to understand the external audit practices in agricultural cooperatives according to the directions of the codes of corporate governance IBGC, as well as a desire to function as a theoretical approach that considers the relationship between independence and the quality of an accounting firm.
It was used for this research the database provided by FIPECAFI, which is formed by cooperatives in the survey of the Best and Largest Businesses between 2005 and 2009. The database is composed of 72 agricultural cooperatives and was used to analyze the external auditing practices and the representation of small and large accounting firms in providing this service to agricultural cooperatives.
To complement the research, this study also used the database of the OCB, in which the audit companies that have accreditation with the organization are listed. It appears that accounting firms are registered with the OCB. We analyzed the distribution of services between accounting firms that constitute the major group of accounting firms and those not participating in this group between the years 2005 and 2009, as well as firms that audited the largest cooperatives. There is an indication of the application of the rotation of accounting firms in compliance with good governance practices.

3.1 Analysis of the distribution of services and audit accreditation

The database of the Best and Largest Businesses, comprising 42 audit firms, was compared to the list provided by the OCB, composed of 78 accredited accounting firms. In comparing the two sources, it appears that of the 42 audit firms listed in the Best and Largest Businesses database, 21 firms(50%) are not listed as accounting firms that have accreditation with the OCB.
According to Silva (2010, p. 17), accounting firms that constitute the 'Big Four' (PricewaterhouseCoopers, Deloitte ToucheTomatsu, KPMG, and Ernst & Young) are the "most recognized and trusted in the Brazilian market and the world market". The author also points out that in Brazil, BDO Trevisan is also perceived in the same manner. The analysis showed that, among the 21accounting firms that are not accredited by the OCB, there are three companies that comprise the largest group of these firms: BDO Trevisan, KPMG, and PricewaterhouseCoopers.
Table 1 shows the participation of the major accounting firms in comparison with those that are not in this group for each of the years analyzed.
It appears that a significant percentage of audit services performed for cooperatives are not performed by the largest accounting firms, including the accounting firm BDO Trevisan.

In the five years evaluated, the percentage of cooperatives audited by major accounting firms varied between 12.96 and 16.36%, while accounting firms that are not among the largest conducted between 83.64 and 87.04% of the audits of agricultural cooperatives in the database. It is noteworthy that there is little variation in results between the years analyzed.

Table 1. Comparison of the representation of large versus small audit firms in the audit market for cooperatives between 2005 and 2009

Groups	2005	2006	2007	2008	2009
Cooperatives audited by small accounting firms	85%	86.54%	87.04%	85.11%	83.64%
Cooperatives audited by the group of major accounting firms	15%	13.46%	12.96 %	14.89%	16.36%

Source: The Best and the Largest Businesses Database

The largest accounting firms audited fewer cooperatives in the database than small accounting firms. For major accounting firms, two principal observations can be made. First, Ernst & Young did not audit the cooperatives studied. The second observation refers to the fact that the other major accounting firms do not show progress in auditing these cooperatives (i.e., the number of cooperatives audited by these firms stays constant over the years).

As noted, there was a large variation between the percentages of cooperatives audited by groups of major and small accounting firms (e.g., 15 and 85%, respectively, in 2005).This variation was not observed when the analysis was conducted with each accounting firm (not considering the group), and therefore, it is possible that major accounting firms audited the same percentage of cooperatives as small accounting firms.

Thus, we proceeded to test the mean difference in the percentage of cooperatives audited by the group of the major accounting firms and the group of small accounting firms. In the *t* test for independent samples, considering a significance level of 0.05 ($\alpha = 0.05$), it appears that there is insufficient evidence to corroborate the assertion that the average percentage of cooperatives audited by each of the major accounting firms is different from the average of cooperatives audited by each of the small accounting firms.

Although it is not possible to statistically infer that the averages between accounting firms of each group are different, it was found that the total percentage of cooperatives audited by small accounting firms is dispersed among a greater number of audit firms.

When the analysis is conducted by considering each of the accounting firms in the database (not separated into the groups of major and small firms), it is not possible to verify a large variation in the percentage of audit firms. Most accounting firms demonstrate percentages from 1.85 to 1.92%. It is noteworthy that three of the small accounting firms audit a larger percentage of cooperatives than the other firms, including the firms Dickel & Maffi, Glcpetri,and Moore and Stephens PRISMA.

It was found that the company Dickel & Maffi audited a significant number of the cooperatives, with percentages ranging from 10.91 to 15%. The company, which is headquartered in Porto Alegre, RS, was founded in 1990 and specialized in auditing cooperatives, as well as in providing consulting services. By comparison, the other accounting firms had significantly lower percentages. Accordingly, it can be inferred that for the audit market of agricultural cooperatives, factors such as experience in specifically auditing cooperatives or specifically auditing a particular company may influence hiring decisions.

The company Glcpetri also stands out due to the fact that although it was not part of the group of the major accounting firms, it audited 8% of the cooperatives in the database in 2005, compared with other accounting firms that audited 1.82%.

It was also noted that Moore Stephens Prisma evolved in the cooperative audit market, as it audited 2.5% of the cooperatives in 2005 and 10.64% of the cooperatives in 2008.

Of the companies that constitute the group of major firms, KPMG showed percentages close to those of companies that audited the most cooperatives. As noted, the company showed an increase in participation in the audit market for cooperatives, auditing the same percentage in 2009 as Moore Stephens Prisma. Although the latter does not belong to the current group of major accounting firms, it is worth noting that the company is part of an international group of accounting firms.

The accounting firms Deloitte Touche Tohmatsu and PricewaterhouseCoopers, which are also part of the group of major firms, also have percentages near that of KPMG.

To complement the analysis of the distribution between major and small firms, we proceeded to check the percentage of these companies that are or are not accredited by the OCB to audit cooperatives.

Table 2. Percentage of cooperatives audited by firms that were either accredited or non-accredited by the OCB and that either did or did not belong to the group of the largest audit firms

Groups	2005	2006	2007	2008	2009
Percentage of cooperatives audited by firms that are not part of the group of major firms but are accredited by the OCB	50%	61.54%	62.96%	60.42%	56.36%
Percentage of cooperatives audited by firms that are not part of the major group of firms and are not accredited by the OCB	35.71%	25%	24.07%	25%	27.27%
Percentage of cooperatives audited by firms that are part of the major group of firms and are accredited by the OCB	4.76%	5.77%	3.7%	2.08%	3.64%
Percentage of cooperatives audited by firms that are part of the major group of firms and are not accredited by the OCB	9.52%	7.69%	9.26%	12.5%	12.73%

Source: Best and Largest Businesses Database

It appears that in the group of small firms, there is a higher percentage of cooperatives audited by firms accredited by the OCB. For example, in 2009, 67.63% of the cooperatives audited by small accounting firms were audited by accredited companies. When the analysis was conducted for the group of the largest accounting firms, only 22.23% of the cooperatives were found to have been audited by large accredited firms.

3.2 Analysis of accounting firms that audited the largest cooperatives

To analyze the accounting firms that audited the largest cooperatives, the cooperatives contained in the database were first sorted in decreasing order according to their net income for the period from 2005 to 2009. Except in 2008, the cooperative that appeared first every year was audited by one of the major accounting firms. Thus, for each of the research years,

the largest 25% of cooperatives ranked in terms of net income were separated to enable the analysis of which accounting firms were used.

The group of major firms, composed of the companies KPMG, PricewaterhouseCoopers, and Deloitte Touche Tohmatsu, audited between 38.46 and 46.15% of the largest cooperatives.

The company Dickel & Maffi, which has the highest percentage representation in the provision of audit services for the full sample of cooperatives that constitute the database, does not present the same situation for the largest cooperatives; namely, there is a greater representation of large accounting firms auditing the group of the largest cooperatives, as shown in Table 3.

Table 3 - Comparison of the variation between the major and small accounting firms when considering all of the cooperatives in the database versus the largest 25% of cooperatives

	Groups	2005	2006	2007	2008	2009
		Percentage of Audited Cooperatives				
Representation of the major and small accounting firms for all of the cooperatives in the database	**Group of small accounting firms**	90%	88.46%	88.89%	91.49%	89.09%
	Group of major accounting firms	10%	11.54%	11.11%	8.51%	10.91%
Representation of the major and small accounting firms for the largest 25% of the accounting firms	**Group of small accounting firms**	60%	53.85%	53.85%	58.33%	61.54%
	Group of major accounting firms	40.00%	46.15%	46.15%	41.67%	38.46%

Source: The Best and Largest Businesses Database

There is a wide variation between the percentage of cooperatives audited by small accounting firms and the percentage audited by the major firms when considering total sample. For example, in 2005, the small accounting firms audited 90% of the cooperatives that constitute the entire database, while the major accounting firms audited 10%.

In comparison, when the analysis was conducted by separating the largest 25% of the agricultural cooperatives, in 2005, 60% of the cooperatives were audited by small firms, while the Big Four audited 40%.

As noted in the table above, in examining a stratified sample of the 25% largest cooperatives, the percentages of cooperatives audited by the small and major groups of accounting firms were similar. As an example, we highlight the years 2006 and 2007, when the small accounting firms audited 53.85% and the major firms audited 46.15%.

Thus, it is possible to observe that a considerable part of the Brazilian agricultural cooperatives are audited by small accounting firms. Even for the largest cooperatives, approximately two-thirds of them are not audited by major accounting firms.

To complement the analysis, we proceeded to use the mean differences (from the *t* test) between the groups of major and small accounting firms for the stratified sample of the largest cooperatives. For the years 2005, 2008, and 2009, there is insufficient evidence to support the assertion that, for the largest 25% of cooperatives, each of the major accounting firms audited a higher number of cooperatives than each of the small accounting firms. Regarding the years 2006 and 2007, it is possible to verify that, for a significance level of 0.05, there is evidence that, on average, each of the major accounting firms audited a higher percentage of large cooperatives.

Compared with the analysis of the entire database, in which it was found that it is not possible to affirm that there is a statistically significant difference between the percentages of cooperatives audited by major and small firms, when the analysis was conducted by considering the largest cooperatives, evidence was found to support the assertion that in two of the years analyzed, there is a difference between the averages of the two groups.
Considering that, for the years 2006 and 2007, there was variation regarding the evidence that the Big Four audited the largest cooperatives, it can be suggested that factors such as the size of the cooperative being audited may influence the auditing firm that is contracted.

3.3 Analysis of the practice of alternating between accounting firms

Considering that the rotation of accounting firms every five years is among the best corporate governance practices indicated by the code of the IBGC, this practice was analyzed using the Best and Largest Businesses database.
To analyze the rotation of independent accounting firms, cooperatives were separated by the number of years for which they appeared among the Best and Largest Businesses database from 2005 to 2009. The cooperatives were then divided by the number of times that the company alternated the accounting firm in the years analyzed. The results are shown in Table 4.

Of the 72 cooperatives listed in the database of the Best and Largest Businesses, 51 cooperatives were analyzed. The analysis was performed for companies that appeared in the database for at least three years because this period is more than half of the period specified for the exchange of accounting firms and enables the verification of accounting firm rotation.

Table 4 - Distribution of cooperatives that are among the Best and Largest Businesses data base for three, four, and five consecutive years and that demonstrated rotation of accounting firms

Number of Years Analyzed	Total Number of Cooperatives	Number of cooperatives that did not show alternation	Percentage of cooperatives that showed alternation	Number of cooperatives that alternated once	Number of cooperatives that alternated twice	Number of cooperatives that alternated three times
Five years	21	11	52.38%	7	2	1
Four years	21	16	76.19%	3	1	1
Three years	9	7	77.78%	2	0	0

Source: Best and Largest Businesses Database

Nine cooperatives appeared in the Best and Largest Businesses database for three years, and seven cooperatives of them (77.78%) showed no rotation of accounting firms in these three years. Two cooperatives (22.22%) showed at least one rotation.
A total of 21 cooperatives appeared for four years, and 76.19% of them did not show rotation of accounting firms during the analyzed period. It is noteworthy that for the two groups (the

group of cooperatives that were among the best and largest for three and four years analyzed), the percentage of cooperatives that did not show rotation is greater than 70%.
Of the 21 cooperatives listed in the Best and Largest Businesses database in the five years analyzed, 52.38% did not alternate accounting firms during the five years. It therefore appears that even for the longest period analyzed, the percentage of cooperatives that do not demonstrate audit firm rotation is greater than 50%. It appears that even considering the frequencies at which the cooperatives appear in the years analyzed, there is a representative percentage of organizations that do not switch accounting firms.

5 Concluding Remarks
The analysis verified some characteristics of the monitoring, through external audit, of the largest agricultural cooperatives in Brazil (according to the database of the Best and Largest Businesses).
The main features observed include the following:
(A) the group of small accounting firms has great representation in the audit market of agricultural cooperatives when the analysis is performed on the entire sample;
(B) while analyzing the largest 25% of cooperatives in the sample, it was found that the group of small accounting firms maintained a great representation in the audit market than the group of major accounting firms;
(C) as shown in Table 1, it was not possible to verify differences in the average number of cooperatives audited by each accounting firm, and each accounting firm has approximately the same average number of cooperatives (without concentration); and
(D) the practice of rotating accounting firms is not widely adopted by the cooperatives studied, showing that accounting firms work with the same cooperative for a longer period than the indicated by Brazilian corporate governance code.
It was also observed that the group of smaller accounting firms is well represented in the audit market for agricultural cooperatives, with percentages ranging from 83.64 to 87.04% of the surveyed cooperatives.
It is noteworthy that the total percentage of representation of the group of small accounting firms is dispersed among a large number of accounting firms and that these firms individually audited less than 2% of the cooperatives studied each year.
From the analysis of the group of major firms, it is emphasized that it was not possible to verify evolution in the observed number and percentage share of cooperatives audited by these firms between 2005 and 2009, as there was no growth trend or preference.
By performing an analysis of the particular set of accounting firms accredited by the OCB, it appears that the percentage of cooperatives audited by small accounting firms accredited by the OCB is high, ranging between 50 and 62.96% of the sample. For cooperatives audited by major accounting firms that are also accredited, the percentage varies from only 2.08 to 5.77%. Thus, there is also a greater representation of smaller firms in the audit market for agricultural cooperatives when considering that these accounting firms are accredited by the OCB.
Regarding the relationship between the size of the cooperative and the size of the accounting firm, it is noted that the representation of the group of major accounting firms is higher for the sample of the largest cooperatives. The major accounting firms showed percentages ranging from 38.46 to 46.15% between the years 2005 and 2009 for the cooperatives that were audited. It also appears that approximately 50% of the cooperatives analyzed do not adopt the practice of rotating accounting firms.

Thus, it can be concluded that there probably are problems related to external audits for the sample of Brazilian agricultural cooperatives among the best and largest companies in Brazil. There is a concentration of cooperatives audited by small accounting firms, which may mean that there is a certain contractual dependence between the company and the cooperative being audited; this contractual dependence may eventually influence the quality of audit services and information considering the theoretical background on audit independence.
It also appears that there isn't a widespread practice of rotating accounting firms in audit activity outside the Brazilian agricultural cooperatives, which may signify the existence of relational contracts between the accounting firm and the cooperative being audited; this could signal problems influencing the quality of monitoring.
Only some of the accounting firms are certified by the OCB, which may indicate that the fact that the accounting firm is certified and accredited to perform these activities is not always a selection criterion for the cooperatives, which can also denote quality problems in the audit and monitoring processes.
Finally, the sample consists of the largest cooperatives in Brazil, which are part of the 500 best and largest companies in Brazil. The largest cooperatives in this sample, accounting for 25% of all cooperatives, exhibit essentially the same general characteristics with regard to monitoring, including reduced rotation of accounting firms, relational contracts, and a significant number of small firms, indicating possible problems of contractual dependency, quality, and influence in monitoring. These activities are performed by companies that mostly lack quality certification and experience, which demonstrates once again the likelihood of quality and influence problems in these monitoring activities.
Thus, it is possible to affirm that there are problems in cooperative organizations of information asymmetry between managers and associate members of the cooperative, as well as efficiency problems in monitoring, although the legislation requires the existence of a Supervisory Board. This problem occurs because the Supervisory Board is composed exclusively of associate members with no experience in this activity, indicating a lack of professionalism. Although the hiring of external, independent accounting firms may reduce this problem and these information asymmetries, this solution may hinder the independence and quality of information. This is due to the fact that these companies depend on their agreement with the cooperative, as they are mostly small and maintain relational contracts, which may influence the results.
It is also noted that there is no preference among the largest Brazilian cooperatives in the hiring of major accounting firms that are recognized in the market; there is no prioritization for the rotation of the accounting firm, and there is no preference for accounting firms that are accredited by the OCB. This indicates that there are problems in the quality of monitoring and information offered to their associated members.

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