



## Monitoring practices in Brazilian credit unions: a study on monitoring and accounting indicators

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### Abstract

Monitoring helps in incentive mechanisms and punishment because it allows us to observe the behavior and give credibility to the system because the agent understands that monitoring is to redevelop or punish their attitudes. It requires the development of a monitoring framework that recognizes the existence of heterogeneity of members and that allows the survival of the cooperative organization. In addition, a monitoring economic results and to provide services and control by multiple principals who are cooperative members is necessary. Therefore, monitoring reduces moral hazard and thus increases the efficiency of the organization. It is critical to monitor the economic results and to provide services and control by multiple principals who are members of the cooperative. This therefore cooperatives have economic objectives for the provision of services to their members. The research question is: higher compliance monitoring practices indicated by the Central Bank (BACEN) influences the financial statements as assets, revenues and surplus? Thus, the aim of this work is to identify if certain accounting information is influenced by greater adherence to monitoring practices. This research aims to contribute to the understanding of the relationship between monitoring practices, which possibly implies the reduction of agency costs and consequently the efficiency of cooperative organizations, and accounting information as an asset, revenue and surplus. After the analysis of the mean difference test, we can see that the higher compliance monitoring practices indicated by the Central Bank can influence a higher asset value, higher value of revenue and a higher surplus in credit unions. Not being able to infer that a greater adherence monitoring practices directly influence asset, revenue and surplus or those variables that influence higher compliance monitoring practices have become a problem of endogeneity. Can only infer that there is an influence between greater adherence practices and monitoring these variables.

**Keywords:** Monitoring. Credit unions. Asset. Revenue. Surplus.

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## Introduction

Cooperative members are owners and key multiples of the organization, then presenting many agency problems that can impact the efficiency of the organization. Through monitoring and control these agency problems can be reduced. In the cooperative law the associates are owners and users is called the principle of double quality. Only with the use of services and the participation of the cooperative that the cooperative will become stronger and able to offer better services.

But co-op member, while being an agent and principal, has its particular objectives in place of the efficiency of the cooperative, ie, a relation of contractual opportunism. The cooperative (the principal) may have less information about the behavior of the manager (agent) that the manager himself, which leads him to have attitudes as their personal interests, even though contrasting with the interest of the cooperative. For this problem, a system to encourage the cooperative could reduce this type of action and increase the efficiency of cooperative (BIALOSKORSKI NETO, 2005).

It is therefore necessary to develop a monitoring framework that recognizes the existence of heterogeneity of members and that allows the survival of the cooperative organization. In addition, a monitoring economic results and to provide services and control by multiple principals who are cooperative members is necessary.

Klapper and Love (2002) cite one aspect that stands out as determinants of monitoring: the size of the company. They argue that larger firms may have greater agency problems arising from its free cash flow, leading to a need for better monitoring practices to compensate for this problem. In addition, larger companies generally have more resources to implement best and more practices of monitoring.

Thus, the question is: higher compliance monitoring practices indicated by the Central Bank influences the financial statements as assets, income and leftovers? Thus, the aim of this work is to identify if certain accounting information can be influenced by greater adherence to monitoring practices. For this work is divided into theoretical, research methodology, results and conclusion.

## Theoretical framework

Credit unions are financial institutions set up as cooperative societies, which has as its object to provide related financial services such as lending, deposit-taking sight and run checks, providing collection services, custody, of receipts and payments for third parties under agreement with public and private financial institutions and correspondent in the country, and other specific operations and duties according to the legislation in force (PINHEIRO, 2008).

A credit union is able to perform virtually the same financial operations permitted to a commercial bank. In addition to receiving demand deposits, conduct active operations of lending in various ways, showing that incur the same risks of financial intermediation that occur with multiple and commercial banks in general.

Credit unions according to the Organization of Brazilian Cooperatives - OCB (2014) are cooperatives designed to promote savings and financing needs or achievements of their members. It provides rural and urban credit. Credit operations in Brazil, credit unions reach R \$ 29, 8 billion reais. The number of cooperatives is 1,047, with approximately 4,673,174 members.

The analysis of organizational efficiency from the perspective of organizational economics requires consideration of the processes of decision making and strategic planning in two different and complementary perspectives. They are: the distribution of control rights and law-making. In other words, addresses the perspective of governance and value and availability of information about the perspective of management control systems (BIALOSKORSKI NETO et al., 2012)

Dietrich (2001) also argues that the systematization of knowledge about the rights of control in an organization requires an analysis of the structure of the organization, depending on their governance and decision rights division, as well as on their process, depending on the flow of information and therefore on the characteristics of the management system. Thus, both dimensions of organization structure and the right decision can classify such processes.

The elements of management control systems include strategic planning, budget preparation, resource allocation, performance measurement, evaluation and incentives, allocation of responsibility center and composition of transfer price. The management control is essential in decentralized organizations. The more complete are contract less necessary control mechanisms are (ANTHONY, 1988).

Systems of managerial control should be adjusted to the company's strategy and consequently the organizational architecture. But it is also possible to say that strategies emerge through experimentation and are influenced by management systems of the organization. In this latter perspective the management control systems that influences the development of the strategy (ANTHONY, 1988).

This research starts from the assumption that the mechanisms of monitoring and control that compose the management systems must be aligned the organization's strategies and consequently the organizational architecture.

In organizations, the teams have various types of resources that are used and the product is not a sum of separable outputs and not all resources belong to only one person. Demstz and Alchian (1972) argue that it is difficult to measure the individual participation of each individual and also exposes that productivity can increase together. That is, the result (product) is not the sum of individual outputs. Within the team there may be individuals who struggle more than others and some who seek to shirk (shirk) seeking the ride (free-rider) effect.

The shirk is because there are unobservable variables in the contract and how the agent is opportunistic behavior that he will submit maximize its utility that may be counter to the main utility. This creates organizational inefficiency through agency problem.

Encourage team spirit is one of the alternatives against individuals who strive more in relation to others and in relation to shirk. The agents start to see themselves as a team with team spirit. Furthermore, Alchian and Demstz (1972) also claim that another solution to be made is the monitoring, linking wages monitor the performance of the team and giving it the right to monitor waste; right to observe the behavior of in-

puts; be common center of all contracts of entry; change the set of team members and sell those rights.

However, it is necessary to know whether it is advantageous to know the individual performance of each team member, as there is a cost of monitoring and also pegged the cost of replacement if necessary. It is hoped that by monitoring the behavior of dodging decrease and thus the result is greater. But it is important to note that a completely effective control is not possible because there are unobservable variables (ALCHIAN; DEMSTZ, 1972).

The moral (moral hazard) risk is a form of post contractual opportunism that may be caused by the presence of unobservable variables in the contract, leading to a behavior that can not be observed, or the arrest of privileged information of a party, making their own in the expense of the interests of the other party interests (MILGROM; ROBERTS, 1992).

Moral hazard impacts the efficiency of contracts as it leads to expropriation of wealth from one party. Moral hazard causes inefficiency of the transaction as it interferes in the beginning of the linked efficiency maximization of the interests of both parties, the best possible choice (MILGROM; ROBERTS, 1992).

Given that moral hazard is related to incomplete contracts, information asymmetry and opportunism, the other party needs protections that will minimize the existence of moral hazard in the contract. This solution is linked to mechanisms for monitoring, control and incentives (MILGROM; ROBERTS, 1992).

According to these authors, the monitoring aims to prevent inappropriate behavior before it occurs, decreasing the likelihood of opportunistic behavior that affects the efficiency and allow rewards and punishments occur properly. Already incentive mechanisms are explicit in the contract that allows the parties alignment of interest, since the reward of both parties are tied to results.

Monitoring helps us incentive mechanisms and punishment because it allows us to observe the behavior and give credibility to the system as the agent understands that the tracking is to redevelop or punish their attitudes. Thus, the incentive and monitoring reduce moral hazard and hence increase the efficiency of the organization (HOLMSTROM, 1982).

The problem of moral hazard refers to the challenge of inducing the agent to provide adequate amounts of inputs given that their effort can not be observed directly and employed when referring to work together (team). When thinking in incentives for teams is necessary to have two problems involved: moral hazard and shirk (shirk activities). Thus, the form of incentive other than incentives individual agent teams. Moreover, it is necessary to consider the environment in which the team is entered (HOLMSTROM, 1982).

It is the responsibility of the principal administration of the scheme, design definitions, targets and monitoring mechanisms. Monitoring enters this process as an help in the observation of behavior for setting targets and mechanisms that stimulates the agent tent great effort because he knows he is being observed (HOLMSTROM, 1982).

In uncertain environments is necessary to consider the random effect in the results of independent effort unfastened by the agent. So to Holmstrom (1982), it is necessary to incorporate a probability of occurrence of events working with targets set at maximum and minimum. The principal should develop a system of incentives and bo-

nuses with punishments that portrays the uncertainty of the environment, reducing the problem of ambiguity.

Thus, it is with the components of the team strive to achieve a better bonus and thereby increase the usefulness of the page. In this case, monitoring is also required to assist with the incentive system reduce moral hazard and Shirk.

Thus, note the need for monitoring to reduce opportunistic attitudes. The monitoring aims to achieve organizational efficiency through the reduction of agency conflicts.

Thus a monitoring economic results and to provide services and control by multiple principals who are cooperative members is necessary. This therefore cooperatives have economic objectives for the provision of services to their members. According to Ventura et al. (2009), governance aims to align the systems for monitoring, control and incentives for management decisions are made in the best interest of the owners.

Klapper and Love (2002) cite one aspect that stands out as determinants of monitoring: the size of the company. They argue that larger firms may have greater agency problems arising from its free cash flow, leading to a need for better monitoring practices to compensate for this problem. In addition, larger companies generally have more resources to adhere to recommended and best practices of monitoring.

## Methodology

This study is based on data provided by the Central Bank of Brazil from a questionnaire. The Central Bank applied a questionnaire to credit unions of Brazil, during 2008 the Central Bank The purpose of this questionnaire was to provoke discussions on the subject with the leaders rethink governance mechanisms and get diagnosis on the perception of these leaders and the current practice of governance in cooperatives.

This survey by the Central Bank, which included the questionnaire, gave rise to the book information Guidelines for good governance practices in Credit Unions, published by the Central Bank, according to Ventura et al. (2009) as a result of the project of good governance practices indicated.

In this book the Central Bank diagnosed the particularities of corporate governance of credit unions. The aim of this project is to strengthen the Central Bank's credit cooperative segment, through the Corporate Governance Project. It also aims to stimulate and induce the Brazilian credit cooperatives to adopt good governance practices indicated.

The project developed by the Central Bank (2009) Corporate Governance aimed to stimulate and induce the Brazilian credit cooperatives adopt good governance practices. It is understood by governance issues related subjects participation, representativeness, monitoring and controlling the actions of managers, relationship between directors and executives, audit and risk exposure and relationship with the system (central credit unions and confederations).

The number of credit unions in the sample was used in 1183, representing 98% of existing cooperatives in the year 2008 is noteworthy that, with respect to the sample, the cooperatives that have not responded to the questionnaire were eliminat-

ed or who did not have asset values recipe and leftovers. The initial number of cooperatives was 1199.

The approach used in this research was to perform multiple comparisons in order to identify significant differences between the samples subjected to the test. The sample does not show a normal distribution, and for this reason tests were employed nonparametric tests which are known as open data distribution tests. For testing four independent samples were (each representing one quartile) with variable ordinal measurement, we used a nonparametric Mann-Whitney test. As for the tests with more than two independent samples with ordinal variables measurement, we used the nonparametric test Kruskal-Wallis.

A summation of which monitoring practices credit unions adhered was done. After this summation, the cooperatives were separated into quartiles to the verification of test medium. 4 quartiles, where 0 represents the upper quartile compared to the highest number of membership practices for monitoring, 1 represents the intermediate quartile, the lower middle quartile 2 and 3 the lowest quartile compared cooperatives that adhere less practices were separated monitoring. The variable classification of these quartiles was the sum of the number of monitoring practices adhered by cooperatives. Thus, to a greater understanding of the accession monitoring practices set by the Central Bank influence financial information, the following research hypotheses have:

**Table 1** – Hypotheses of the research

Hypotheses		Authors and theory into cooperatives and / or companies	Coefficient expected by the authors
H <sub>1</sub>	Cooperatives with highest number of monitoring practices tend to have a higher asset.	Klapper and Love (2002)	( + )
H <sub>2</sub>	Cooperatives with highest number of monitoring practices tend to have higher income.	Klapper and Love (2002)	( + )
H <sub>3</sub>	Cooperatives with highest number of monitoring practices tend to have larger surpluses.	Klapper and Love (2002)	( + )

Source: Search Data, 2016.

## Results

For most practical adherence monitoring indicated by the Central Bank, it is observed that the cooperatives that adhere more to these monitoring practices have a higher asset value. The averages of the four quartiles were statistically different, since they have a p-value <0.01. It can be observed that cooperatives with larger practices have higher asset. The upper quartile presented as mean 39 of the 45 practices indicated, having an average assets of R \$ 46,443,101.00 which is most statistically significant at 1% than the lower quartile with 19 monitoring practices on average and an average asset of R \$ 4,445 .360,66. The superior quartile also has average practices different



statistically significant at 1% inferior quartiles relative to the active monitoring of credit unions. These values can be seen in Table 2.

In relation to revenue of cooperatives, it is observed that the level of 1% significance cooperatives with larger practices have higher revenue. The superior quartile presented as mean 39 of the 45 practices indicated, with an average income of R \$ 8,343,526.12 which is most statistically significant at 1% than the lower quartile with 19 monitoring practices on average and an average revenue of R \$ 819,689.49.

But between the two intermediate quartiles there is statistically significant difference in average, but the level of 5% (sig 0.034), where the intermediate quartile showed on average 34 of the sum of monitoring practices, with an average income of R \$ 2,962,128, 46 compared to an average of 27 monitoring practices adopted with an average income of R \$ 819,689.49. Between the lower intermediate quartiles the inferior quartile there is also a statistically significant difference in average, but also at the level of 5% (sig 0.028), where the lower middle quartile showed a mean 27 monitoring practices with average revenue of R\$1,366,541.68 and the bottom quartile had a median of 19 monitoring practices and an average income of R\$819.689.49. These values can be seen in Table 2.

Thus, it is possible to observe that there is a greater influence of the accession monitoring practices indicated by the Bank and the revenue from the credit union.

Regarding the leftovers, there is a statistically significant difference at the level of 1% in average membership of the monitoring practices indicated by the Bank the superior quartile relative to the intermediate quartiles upper, intermediate and inferior compared to the inferior quartile. The superior quartile has an average of 39 monitoring practices and leftovers in the average value of R \$ 1,183,009.81 against the inferior quartile which showed an average of 34 practices and medium leftover R\$390.0530,99. The inferior middle quartile showed a mean 27 monitoring practices and remains on average R\$ 224,869.10 and the inferior quartile had an average of 19 monitoring practice and leftovers in the average value of R \$ 127,911.43.

You observe that the higher compliance monitoring practices tend to influence the value of the leftovers of credit unions. But it is important to note that this average test, the intermediate quartile and inferior intermediate quartile showed differences statistically significant at 10% (sig 0.086) averages, where the intermediate quartile has an average of 34 monitoring practices and leftovers with average value of R \$ 390,530.99 against the inferior middle quartile averaging 27 monitoring practices and medium leftovers of R \$ 224,869.10.

Similarly, it is important to note that this average test, the intermediate quartile and the inferior quartile showed statistically significant differences at 5% (sig 0.017) averages, where the intermediate quartile has an average of 34 monitoring practices and leftovers in the average value of R \$ 390,530.99 against the inferior quartile with an average of 19 monitoring practices and leftovers with an average of R \$ 127,911.43.

Regarding the inferior intermediate quartile and the inferior quartile there is no statistically significant difference in the mean (0.516). These values can be seen in Table 2.

Thus, attention is needed to suggest that better monitoring practices set by the Central Bank can influence the leftovers of credit unions, because these averages monitoring practices were different statistically significant for intermediate and upper quar-

tile, upper quartile and quartile inferior intermediate and upper quartile and less than 1% reliability quartile. The means of monitoring practices were statistically significant different at 5% for the intermediate quartiles intermediate upper and lower quartile and the upper quartile intermediate and less than 1% reliability quartile. And shows no statistically different mean values for the intermediate intermediate upper and lower quartile.

In addition to these financial statements as leftovers, assets and revenues. Also analyzed adherence monitoring practices and the number of employees. The number of employees can be considered a proxy for size of organization. According to the findings, it is noteworthy that no difference in mean between the adoption of practices for monitoring and cooperatives with more or less employees

The first quartile, or top quartile, presented 39 monitoring practices with 36 employees compared to 33 monitoring practices and 18 employees, being significant at de1% over the intermediate quartile. The same happened with the other quartiles, where the upper quartiles had higher monitoring practices than the lower quartiles, with a higher number of employees. The upper quartile were analyzed with the intermediate quartile, the top quartile with the lowest quartile intermediate the upper and lower quartile intermediate quartile, the intermediate and the lower quartile intermediate quartiles, the lowest quartile and the intermediate and lower quartile quartile intermediate upper and lower quartile. All were significant at the 1% level.

One consideration to be made is that the two intermediate quartiles showed mean differences in relation to the sum of monitoring practices. The lower middle quartile has more employees and fewer monitoring practices.

**Table 2** – Difference of means of adopting the practices set monitoring in relation to assets, income and leftovers

Quartile	No. cooperatives		Average monitoring practices	significance
<b>Average assets</b>				
Superior	296	R\$46.443.101,35	39	
Superior intermediate	295	R\$18.098.139,06	34	0,000***
Superior	296	R\$46.443.101,35	39	
Inferior intermediate	297	R\$7.593837,77	27	0,000***
Superior	296	R\$46.443.101,35	39	
Inferior	295	R\$4.445.369,64	19	0,000***
Superior intermediate	295	R\$18.098.139,06	34	
Inferior intermediate	297	R\$7.593837,77	27	0,000***
Superior intermediate	295	R\$18.098.139,06	34	
Inferior	295	R\$4.445.369,64	19	0,000***
Inferior intermediate	297	R\$7.593837,77	27	
Inferior	295	R\$4.445.369,64	19	0,000***
<b>Average revenue</b>				
Superior	296	R\$8.343.526,13	39	
Superior intermediate	295	R\$2.962.128,46	34	0,000***
Superior	296	R\$8.343.526,13	39	
Inferior intermediate	297	R\$1.366,541,68	27	0,000***



Superior	296	R\$8.343.526,13	39	
Inferior	295	R\$819.689,49	19	0,000***
Superior intermediate	295	R\$2.962.128,46	34	
Inferior intermediate	297	R\$1.366.541,68	27	0,034**
Superior intermediate	295	R\$2.962.128,46	34	
Inferior	295	R\$819.689,49	19	0,000***
Inferior intermediate	297	R\$1.366.541,68	27	
Inferior	295	R\$819.689,49	19	0,028**
<b>Average of leftovers</b>				
Superior	296	R\$1.183.009,81	39	
Superior intermediate	295	R\$390.530,99	34	0,000***
Superior	296	R\$1.183.009,81	39	
Inferior intermediate	297	R\$224.869,10	27	0,000***
Superior	296	R\$1.183.009,81	39	0,000***
Inferior	295	R\$127.911,43	19	
<b>Quartil</b>	<b>No. cooperatives</b>		<b>Average monitoring practices</b>	<b>Significance</b>
Superior intermediate	295	R\$390.530,99	34	
Inferior intermediate	297	R\$224.869,10	27	0,086*
Superior intermediate	295	R\$390.530,99	34	0,017**
Inferior	295	R\$127.911,43	19	
Inferior intermediate	297	R\$224.869,10	27	0,516
Inferior	295	R\$127.911,43	19	
<b>Average number of employees</b>				
Superior	296	36	39	
Intermediate superior	295	18	34	0,000***
Superior	296	36	39	
Intermediate inferior	297	13	27	0,000***
Superior	296	36	39	
Inferior	295	17	19	0,000***
Intermediate superior	295	18	34	
Intermediate inferior	297	13	27	0,000***
Intermediate superior	295	18	34	
Inferior	295	17	19	0,000***
Intermediate inferior	297	13	27	
Inferior	295	17	19	0,000***

\* - Significance level of 10%.

\*\* - Significance level of 5%.

\*\*\* - Significance level of 1%

Source: prepared by the authors with data provided by the Central Bank.

Therefore, it is possible to see that a higher adherence monitoring practices set by the Central Bank can influence a major asset, a larger number of leftovers and recipe for credit unions. One reason for this could be that the aderer the monitoring practices can be a reduction of agency conflicts and improving internal controls.

## Conclusions

After the analysis of the mean difference test, you can verify that a greater adherence monitoring practices set by the Central Bank can influence a greater asset value, higher value and higher revenue value remains in credit unions, and largest number of employees representing the size of the cooperative which confirmed the hypothesis H1, H2 and H3 presented in the paper. This, because they are differences in means with results statistically significant.

The limitation of this research takes place due to the difficulty of establishing direct cause and effect enters monitoring practices and active, and leftovers revenue. Not being possible to infer that a greater adherence monitoring practices directly influence the asset, revenue and leftovers or those variables that influence the greater adherence monitoring practices have become a problem of endogeneity. One can only infer that there is an influence between greater adherence practices and monitoring these variables.

As suggestions for future research are suggested to study the adherence monitoring practices set by the Central Bank considering variables such as net margin, return on assets (ROA) and levels of debt the cooperative.

## References

- ALCHIAN, A. A.; DEMSETZ, H. Production, information costs, and economic organization. **The American Economic Review**, Nashville, v. 62, n. 5, p. 777-795, 1972.
- ANTHONY, R. N. The Management Control Function. **The Harvard Business School Press**. Boston, 1988.
- BIALOSKORSKI NETO, S.; BAROOSO, M. F. G.; REZENDE, A. J. Governança cooperativa e sistemas de controle gerencial: uma abordagem teórica de custos da agência. **Brazilian Business Review**, Vitória, v. 9, n. 2, p. 72-92, 2012.
- DIETRICH, M. **Accounting for the economics of the firm**. Management Accounting Research.V.12, 2001.
- HOLMSTROM, B. Moral hazard in teams. **The Bell Journal of Economics**, v. 13, n. 2, p 324-340, 1982.
- KLAPPER, L.; LOVE, I. Corporate governance, investor protection, and performance in emerging markets. **World Bank Policy research**, working paper n. 2818, 2002.
- MILGROM, P.; ROBERTS, J. **Economics, Organization and Management**. Prentice Hall; 621p, 1992.
- ORGANIZAÇÃO DAS COOPERATIVAS BRASILEIRAS (OCB). Disponível em: <[www.ocb.org.br/](http://www.ocb.org.br/)>. Acesso em: 15 jun. 2014.
- PINHEIRO, M. A. H. **Cooperativas de crédito: história da evolução normativa no Brasil**. 6. ed. Brasília, DF: Banco Central, 2008.

VENTURA, E. C. F. (Coord.). **Governança cooperativa:** diretrizes e mecanismos para fortalecimento da governança em cooperativas de crédito. Brasília, DF: Banco Central do Brasil, 2009.

Received: 07/29/2016

Approved: 10/27/2016

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