

# Earning management in Brazilian financial institutions

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## RESUMO

### Gerenciamento de resultados em instituições financeiras brasileiras

No presente trabalho, tem-se como objetivo estudar o gerenciamento de resultados em uma amostra representativa de 123 bancos no mercado brasileiro entre os anos de 2001 e 2012. Dado o papel importante que os bancos desempenham na economia de um país, é necessário entender que existem fatores discricionários envolvidos no relato de rentabilidade de uma instituição financeira. Regras de provisionamento de crédito para as instituições financeiras brasileiras estão descritas na Resolução 2682/99 do Conselho Monetário Nacional. Por causa da discricionariedade permitida nessa resolução, a provisão para perdas de crédito é usada como instrumento de gerenciamento de resultados, o que não é uma prática ilegal, mas esse comportamento afeta a percepção de risco dos agentes e analistas, e eles devem estar cientes disso e compreendê-lo. Os resultados mostram que o provisionamento de crédito é usado como um mecanismo de gerenciamento de resultados para suavizar o lucro líquido das instituições financeiras brasileiras. Os bancos brasileiros procuram evitar não somente o lucro líquido antes de despesas com provisão e impostos negativos, mas também lucro líquido antes de despesas com provisão e impostos inferiores em relação ao período anterior. Ao contrário de estudos anteriores, não está claro se os bancos procuram evitar lucro líquido inferior a um determinado grupo de pares.

**Palavras-chave:** instituições financeiras brasileiras, gerenciamento de resultado, provisão de crédito, regressão com dados em painel.

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## 1. INTRODUCTION

Several authors who have studied earnings management in banking have found empirical support for the claim that banks use the loan loss provision for earnings management (Anandarajan, Hasan, & Vivas, 2003; El Sood, 2012). The authors have also found evidence of earnings management when there is a positive relationship between financial institutions' expenditures on loan loss provisions and their outcomes. Thus, a better outcome motivates greater spending on loan loss provisions to mitigate gains (Ahmed, Takeda, & Thomas, 1999; El Sood, 2012; Kanagaretnam, Lobo, & Yang, 2005).

There are several goals of earnings management. The main objective is typically income smoothing, which is used either when the previously established earnings are high, thus reducing the reported earnings, or when the earnings are considered low, to increase the reported earnings (Zenderski, 2005). In this context, managers attempt to avoid presenting negative net income or a decrease in profit in relation to the previous period (Bornemann, Kick, Memmel, & Pfungsten, 2012). The main objectives of this behavior are to transmit an image of solidity and good performance to the market (Goulart, 2007) and to influence agents' risk perception (Balboa, López-Espinosa, & Rubia, 2013; El Sood, 2012), in addition to other personal goals of managers such as maintaining dividends and contractual bonuses, which are generally at least partially tied to a financial institution's performance (El Sood, 2012). A manager can also choose to continue an earnings management position, even if it may compromise the quality of the presented accounting figures or if it entails future sacrifices by the organization (Martinez, 2001). Financial institutions also seek to meet goals where they can be compared with an industry benchmark or the performance of a peer group (Bornemann *et al.*, 2012).

In Brazil, National Monetary Council (*Conselho Monetário Nacional* – CMN) Resolution 2682/99 established the regulatory framework for loan loss provision accounts. The expenses associated with a loan loss provision account are based on the risk level of the loan portfolio, which is defined by specific criteria in relation to the debtor and the guarantees involved. Because the regulation only suggests guidelines and not objective criteria that determine risk ratings, the Central Bank has delegated to financial institutions the freedom to define credit models at each institution's discretion, resulting in possible inconsistencies related to loan loss provision accounts.

Bornemann *et al.* (2012) carried out the following tests in the German banking market: (i) assessed whether banks avoid a decrease in net income (excluding loan loss provisions) in relation to the previous period, thus seeking to achieve lower outcome variability; and (ii) assessed whether banks seek to avoid a decrease in net income (excluding loan loss provisions) in relation to its peer group. Previous studies on the Brazilian

banking market focused on evaluating whether firms practiced earnings management using a provision account. These studies tested the hypothesis of a positive relationship between a financial institution's expenses and earnings, which would constitute income smoothing (Goulart, 2007; Zenderski, 2005).

The present study aims to investigate earnings management in Brazilian banking, and the study's main contribution is an unprecedented examination of the reasons for earnings management by Brazilian banks, following the framework established in the study by Bornemann *et al.* (2012). The focus of this study is the loan loss provision account management because it is a financial institution's main discretionary account. Second, banks have high leverage, which makes them vulnerable to volatility in asset prices and requires them to make constant adjustments to their loan loss provision accounts to maintain adequate coverage of their loan portfolios (Gonzalez, 2007). Thus, the credit provision account is closely associated with the earnings account and has an important effect on a bank's profitability.

The two-stage least squares (2SLS) method is used; this approach is unprecedented for Brazil and was not used by Bornemann *et al.* (2012). Additionally, this study is the first in the Brazilian market to employ data from the financial crisis of 2007-2009; these data are used as control variables in the investigation of the reasons for earnings management by Brazilian banks.

The study is extremely important because financial statements are the main source of public information on banks, and they serve as a tool to determine banks' current economic and financial position, their potential for growth, and future trends (Assaf, 2007). Additionally, because banks also have systemic importance in a country's economy, it is essential to be able to discern whether and to what extent earnings management occurs in the Brazilian banking market.

## 2. LITERATURE REVIEW AND HYPOTHESES

The regulation that controls the credit provisioning rules in Brazil is Resolution 2682 of the Central Bank of Brazil from December 21, 1999. As defined by the law, a credit rating must be based on some criteria set by the Central Bank and should include at least certain criteria defined by the Resolution. These criteria are the identified provisions in which there is a direct relationship between the credit provision and customers' credit risk.

Although Resolution 2682 results in the evaluation of credit risk by financial institutions, the regulation does not specify the characteristics for each risk category. Thus, each bank is responsible for evaluating each of the elements of the Resolution according to its own criteria and must define its own proprietary model for risk assessment (Parente, 2000). The Resolution introduced a framework for the evaluation of credit risk in financial institutions, but it allowed some freedom

and room for discretion. The Resolution states that the credit provision has a discretionary criterion: “the classification of the operation at the corresponding risk level is the responsibility of the institution holding the credit”. That is, the loan loss provision (LLP) is defined according to the judgment of the manager regarding the risk of the granted loans.

Because the Central Bank only establishes the elements that should be considered in the rating process, it delegates to financial institutions the freedom to define the models at each institution’s discretion.

Despite this discretion, financial institutions are often subject to supervision by the Central Bank regarding the classification of their credit operations. Therefore, they must retain documentation demonstrating their established risk levels. The classifications defined by each institution must also be disclosed in the explanatory notes to the financial statements, as well as the amount of renegotiated credit provisions, provisions against losses, and recovered amounts.

Discretion is allowed by the legislation for credit ratings between the AA and H levels; however, an investigation of whether such discretion creates regulatory arbitrage would require not only the individual analysis of each grant of credit but also comparative research to evaluate each specific customer of the different financial institutions. In this study, such an analysis is not performed, and this characteristic is not used to investigate the existence of earnings management.

The research that is performed in this study concerns regulatory arbitrage made possible by unidentified provisions or general provisions, which allows an examination of whether there is earnings management in Brazilian banks. As defined by the International Monetary Fund, general provisions are intended to cover possible or potential losses that are not yet identified, while specific provisions reflect already-identified losses.

Financial institutions have the opportunity to make additional provisions beyond the levels provided by Resolution 2682 by working with a provision allowance in relation to delayed credits. Non-identified provisions are those that are not associated with loans classified as “in liquidation” or as “delayed”. This practice is known as a “provisioning buffer” (Parente, 2000). These unidentified provisions may create a negative aspect as an auspicious environment arises for regulatory arbitrage and a consequent decrease in the transparency of financial data, which can cause a loss of efficiency in the allocation of resources and potential danger to the stability of the financial system. The establishment of provisions detached from risk ratings opens up the possibility of analyzing credit operations in a less rigorous manner, thereby improving customer risk ratings by using less conservative criteria. This practice may encourage behavior that constitutes a provisioning buffer in the search for comparative advantages in relation to a bank’s peers, not through improved efficiency in the management of credit risk but through a less conservative

portfolio evaluation. This lack of transparency can lead to efficiency losses because it generates rates that are incompatible with the institution’s risk.

No Brazilian author has tested the hypotheses proposed in this study and, despite the fact that the credit provision account is a financial institution’s main accrual account, few significant studies have focused on this account (Goulart, 2007; Zenderski, 2005). Goulart (2007) found that earnings management using the provision account provided more significant results with regard to derivatives and securities.

The main subjects of study in Brazil have used the securities account (Corrar & Gabriel, 2010; Dantas, Medeiros, Galdi, & Costa (2013), 2013; Goulart, 2007; Zenderski, 2005), derivatives (Dantas, Galdi, Capelletto, & Medeiros, 2013; Galdi & Pereira, 2007; Goulart, 2007), and the practice of securitization (Galdi & Camara, 2012). The hypotheses tested in this study follow the framework used by Bornemann *et al.* (2012) and seek to investigate whether there is earnings management in Brazil and how it is practiced.

However, Bornemann *et al.* (2012) study used a particularity of the German financial system, i.e., the existence of a hidden reserve called the “340f Reserve”, which was enacted by German law in 1993. The 340f reserve is established by devaluing active accounts and, unlike the loan loss provision account, its creation does not need to be tied to the inherent risk of a certain category of accounts. From the standpoint of earnings management, the great advantage of setting up this type of reserve is that a justification for it is not required, and therefore discretion can be used. In Brazil, the absence of similar legislation to the 340f account, along with a lack of data, prevents the use of a similar methodology to that used by Bornemann *et al.* (2012) and therefore requires that this study adjusts to the Brazilian reality.

The loan loss provision is used in the present study because according to Kanagaretnam, Lim and Lobo (2010), it is the largest accrual for most of the largest banks and thus plays a significant role in earnings management.

There are various forms of earnings management, and in this study, we focus on the practice of income smoothing, which is used to reduce the dispersion of results and convey an image of solidity and good performance to the market (Goulart, 2007). There are other purposes of earnings management, which are not addressed in this article. For example, a) “bump up” which improves a bank’s performance when the results are close to a given target; b) the “cookie jar”, when there is an incentive to reduce earnings for the current period to increase earnings in less favorable periods; c) the “big bath”, which is used in periods where a bank knows that it will fall short of a certain goal and decides to further reduce profitability.

The hypotheses that we investigate in this study are cited as the main motivations in the capital market by Goulart (2007). He claimed that the intention to satisfy certain benchmark results can be cited as a reason to prevent the disclosure of

losses, demonstrate rising profits, and meet the expectations of investment analysts regarding a firm's results. Dechow and Skinner (2000) argued that there is evidence of the existence of a hierarchy: it is most important to prevent the disclosure of losses; it is secondarily important to show increasing returns; and finally, firms must meet expectations and analysts' forecasts. The authors defined this hierarchy within the capital market; however, it can also be applied to financial institutions, which are seen by investors as a potential target for investment through financing or the purchase of securities.

The existing studies on the Brazilian market have investigated the existence of a positive correlation between a financial institution's provision expenses and net income (Goulart, 2007; Zenderski, 2005)

The first and most intuitive form of earnings management aims to avoid losses (negative profits). By analyzing the profitability of a financial institution, analysts or investors primarily evaluate whether the net income is positive; this analysis does not require historical or comparative data (DeGeorge, Patel, & Zeckhauser, 1999). Such research yields a simple and straightforward answer on whether a financial institution is profitable. Showing net income below zero is avoided in financial statements because from a macroeconomic perspective, net losses in a given year raise questions regarding a bank's solidity and arouse more public interest in investigating the reasons for the poor performance.

From a microeconomic perspective, shareholders wish to increase their influence in a bank's management after the presentation of losses. In both cases, the administrative decisions by the bank's management are now restricted. Thus, managers have strong incentives to preserve the confidence of shareholders and avoid presenting any losses, or at least to present net income higher than zero. A bank that has a narrow loss in a period will therefore perform earnings management through increased revenue and/or expense reductions to reverse the losses and generate profits (Goulart, 2007).

Thus, we define the first hypothesis:

**H<sub>1</sub>:** Banks seek to avoid negative net income pre-loan loss provisions and taxes.

Previous studies that investigated loan loss provision accounts focused mainly on the positive relationship between expense accounts for bad debts and income (before provisions and tax expenses). Thus, the central hypothesis addressed by the existing literature already described earnings management as managers' incentive to reduce the variability of their reported earnings using the flexibility provided by discretionary accounts (Anandarajan *et al.*, 2003; El Sood, 2012). Thus, within the accounting rules, managers may increase/decrease discretionary accruals when a bank reports significant/small profits (Balboa *et al.*, 2013). Ahmed *et al.* (1999) stated that when profits are expected to be high, expenses for provisions

are deliberately minimized to mitigate the adverse effects of other factors on profitability. This approach is known as income smoothing.

Dantas, Galdi, Capelletto e Medeiros (2013) found evidence that banks use the discretionary portion of their derivative accounts for income smoothing, which is a more commonly used practice in private institutions. However, the author's study did not mainly focus on provision accounts. In another study, Dantas, Medeiros, Galdi, & Costa (2013)) also found that securitization is used to smooth earnings.

An important benchmark for managers is the ratio of profits in period  $t$  in relation to period  $t - 1$ , and they are inclined to avoid a drop in profits from the previous period. Bornemann *et al.* (2012) argued that investors in the German banking market interpret perennial increases in net income as the appearance of management's trust in the prospects of future profitability.

In publicly traded banks, share price and bank value tend to increase after an increase in dividend payments from periods of increased profitability, which strengthens the position of managers. Similarly, a drop in profits in comparison to the previous period induces investors to seek a more profitable alternative. For unlisted banks, the motivation to avoid a decrease in profitability results from a desire for a reduction in interference from shareholders, regulators, and other stakeholders. Goulart (2007) stated that although his research on the Brazilian market focused only on income smoothing, other earnings management practices are also considered to be of interest for financial institutions as actions to prevent the disclosure of losses and declining profits. These practices are examined in this study.

Bornemann *et al.* (2012) also stated that managers wish to reduce the volatility of the net income of their banks because less income variability reduces the cost of capital and reflects a lower perceived probability of failure of their financial institution.

Thus, we formulate the second hypothesis:

**H<sub>2</sub>:** Banks seek to avoid negative net income pre-loan loss provisions and taxes in relation to the previous period.

Managers also seek to meet a profitability benchmark of banks' industry or peer group. They tend to avoid a decrease in net income compared with this peer group. This hypothesis was first tested by Bornemann *et al.* (2012) in the international market and has not yet been tested in the Brazilian market. We can draw a parallel between the third hypothesis and the third level of the hierarchy suggested by Goulart (2007). After achieving the first two levels of the hierarchy suggested by Dechow and Skinner (2000), the third goal is to meet the projected results of analysts. Here, we test whether banks seek to meet an industry benchmark that is considered by most analysts and that therefore creates a certain level of expectation in the forecasts.

Bornemann *et al.* (2012) stated that stakeholders value a bank's performance in relation to a peer group and not only in relation to the bank's past performance. In fact, managers themselves analyze a bank's performance against others in the same region and with a similar profile. This comparison creates incentives for managers to avoid decreases in profit compared with their peer group. Those outside a financial institution create a "threshold mindset", i.e., they create certain expectations regarding the bank's performance (DeGeorge *et al.*, 1999), and these expectations can also refer to the comparative performance of banks with similar profiles.

Analysts and investors frequently perform comparative financial analyses of financial institutions that have similar profiles. With this in mind, managers may seek to match or even stand out from their peers. Most analysts consider the outcomes of a group of banks with similar profiles, and these outcomes and comparisons are also taken into consideration by managers (DeGeorge *et al.*, 1999).

In general, banks with similar profiles and therefore similar risks should ideally have similar financial statements and outcomes. Any significant deviation from this pattern calls the attention of analysts, who then perform a more detailed investigation to understand the reasons for the negative deviation.

Thus, we propose the third hypothesis:

**H<sub>3</sub>:** Banks seek to avoid negative net income pre-loan loss provisions and taxes in relation to the previous period of a given peer group.

### 3. METHODOLOGY

#### 3.1. Data

The data used in this study were extracted from information published by the Central Bank of Brazil (*Banco Central do Brasil* – BCB) under different forms: Balance Sheet Accounts (Sisbacen data), Financial Information Quarterly (*Informações Financeiras Trimestrais* – IFT), and Outcome Statement Accounts from the BCB.

The sample was derived from the consolidated bank data I and II, totaling 123 banks, which are all the Brazilian banks with annual data for the period between 2001 and 2012. The initial period of the study was limited by a lack of data from Financial Information Quarterly and the BCB (Outcome Statement Accounts) prior to this period. These 123 banks represent a significant and a representative portion of the total assets of the Brazilian financial system. In December 2012, they had total assets of R\$ 5.1 trillion, which amounts to approximately 90% of all assets in the Brazilian market.

Banks were classified into five different categories according to their profiles and their main business segments: Retail Banks, Subsidiaries of Foreign Banks, Public Banks, Automaker Banks (connected to a non-financial company

active in the automobile/truck market), and Cooperative Banks. These categories were used for the investigation of Hypothesis 3.

Table 1 provides detailed information on the number of banks observed in the sample with the classifications into the different segments. The amount of data at the end of the analysis period is greater because the database was constructed retroactively, i.e., we selected banks in 2012, and data from previous years was extracted from the respective CNPJ (*Cadastro Nacional da Pessoa Jurídica* – VAT identification number) of each bank.

The sample data form an unbalanced panel because certain financial institutions did not exist in a given year or they had no available balance information; therefore, the number of observations is not the same for each year.

There is a predominance of retail banks in the sample and the cooperative banks and public banks categories have considerably small samples; however, these categories were retained in the sample due to the unique role that they both play in the economy.

Table 2 shows the number of banks that hold loan loss provision reserves above the minimum required by the Central Bank and how their use varies over time. Only the banks with available information about loan loss provision reserves were used in the Table 2. It can be seen that banks increasingly use discretion in the provision of credit operations, i.e., they increasingly retain a reserve supply of credit above the regulatory required minimum. In 2001, 28.7% of the sample banks retained provisions in excess of the regulatory minimum, and in 2012, this percentage increased to 54.1%.

#### 3.2. Variables

As Brazil does not have the similar German financial legislation to the 340f account, we adapted our study to the loan loss provision. To analyze the practice of earnings management using loan loss provisions, we use the percentage of expense with credit provisions in the period (llp) as the dependent variable, which is the total spent on credit provision for year *t* as a percentage of total assets. All variables that use balance sheet data were normalized by the total assets for the period. Following the method suggested by Brown *et al.* (2009), this procedure was used to avoid the problem of scale effect. Other authors followed a similar methodology (Balboa *et al.*, 2013; Bornemann *et al.*, 2012; Shrieves & Dahl, 2003). In addition, we also adjusted our explanatory variables by including loan loss provision's discussion of Anandarajan, Hasan and Vivas (2005), Fonseca and González (2008), and El Sood (2012).

Hypotheses H1, H2, and H3 are tested using the following dummy variables:

- **d\_loss:** the value 1 represents the situation where a bank has net income before provisions below zero, representing H1.

Table 1

*Number of Banks in the Sample and Percentage by Different Segments and by Year from 2001 to 2012*

Period	Cooperatives		Automaker		Public		Subsidiaries		Retail		Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %
2001	2	1.9	13	12.0	9	8.3	29	26.9	55	50.9	108	7.9
2002	2	1.8	13	11.9	9	8.3	30	27.5	55	50.5	109	7.9
2003	2	1.9	13	12.0	9	8.3	29	26.9	55	50.9	108	7.9
2004	2	1.9	13	12.0	9	8.3	29	26.9	55	50.9	108	7.9
2005	2	1.8	14	12.7	9	8.2	29	26.4	56	50.9	110	8.0
2006	2	1.8	14	12.5	9	8.0	31	27.7	56	50.0	112	8.2
2007	2	1.8	14	12.3	9	7.9	31	27.2	58	50.9	114	8.3
2008	2	1.7	15	12.8	9	7.7	33	28.2	58	49.6	117	8.5
2009	2	1.7	16	13.4	9	7.6	35	29.4	57	47.9	119	8.7
2010	2	1.6	17	13.8	9	7.3	36	29.3	59	48.0	123	9.0
2011	2	1.6	17	13.9	9	7.4	36	29.5	58	47.5	122	8.9
2012	2	1.6	17	13.8	9	7.3	36	29.3	59	48.0	123	9.0
	<b>24</b>	<b>1.7</b>	<b>176</b>	<b>12.8</b>	<b>108</b>	<b>7.9</b>	<b>384</b>	<b>28.0</b>	<b>681</b>	<b>49.6</b>	<b>1,373</b>	<b>100.0</b>

Table 2

*Number of Banks and Percentage With Only Minimal Provision and With Excess of Provision Loan Loss Reserves by Year from 2001 to 2012*

Period	Only Minimal Provision		Excess Provision		Total	
	No.	%	No.	%	No.	Row %
2001	62	71.3	25	28.7	87	7.3
2002	58	63.7	33	36.3	91	7.6
2003	60	65.2	32	34.8	92	7.7
2004	61	64.2	34	35.8	95	7.9
2005	55	58.8	39	41.5	94	7.9
2006	54	54.5	45	45.5	99	8.3
2007	56	56.6	43	43.4	99	8.3
2008	50	49.0	52	51.0	102	8.5
2009	49	45.4	59	54.6	108	9.0
2010	49	45.8	58	54.2	107	8.9
2011	49	44.1	62	55.9	111	9.3
2012	51	45.9	60	54.1	111	9.3
	<b>654</b>	<b>54.7</b>	<b>542</b>	<b>45.3</b>	<b>1,196</b>	<b>100.0</b>

We assume that banks will reduce % expense with credit provision if they have negative net income. As 1 represents negative net income, the negative sign is expected.

- **d\_prev\_year**: the value 1 represents the situation where a bank shows a decrease in net income before the LLP that is

lower than the previous year, representing H2. We assume that banks will reduce % expense with credit provision if banks expect net income lower than the previous year. As 1 represents net income below the previous year, the negative sign is expected.

- **d\_peer**: the value 1 represents the situation where a bank shows a decrease in net income before provisions in relation to its peer group, representing H3. We assume that banks will reduce % expense with credit provision if banks expect net income lower than their peer in the previous year. As 1 represents net income below the net income in the previous period of respective peer group, the negative sign is expected.

Analysts and investors frequently perform comparative financial analyses between financial institutions that have the same activity profiles. Knowing this, managers seek to match or even stand out from their peers. Ideally, banks with similar activity profiles and therefore similar risks should generally have similar results. Any significant deviation from this pattern negatively calls the attention of analysts.

The outsiders of a financial institution create a “threshold mindset”, i.e., they create certain expectations regarding a bank’s performance (DeGeorge *et al.*, 1999); therefore, it was expected that H3 showed significant results. In the Brazilian market, banks with similar profiles tend to show similar results for profitability.

To investigate the three hypotheses, we use the following control variables (a summary of all the variables is shown in Table 3):

- **ni\_assets**: the main control variable in this study is the accounting net income excluding credit provisions and taxes in the period. In the analysis of the balance sheet of a company, it is expected that the higher net income, lower spending, if revenue remains constant, in other words, there must be a negative relationship between earnings and expenditure. However, as previously stated, several scientific studies have found evidence of earnings management in financial institutions, and in this case, the authors found a positive relationship between earnings and expenditure on credit provision, indicating that companies increase their expenditure on credit provision when they have higher profits, in order to mitigate their earnings.
- **organizational structure characteristics: publicly traded bank (dummy variable)**. The literature showed conflicting perspectives on the impact a publicly traded bank would have on earnings management (Fonseca & González, 2008). On the one hand, a publicly traded bank has a greater incentive to manage earnings. Because these banks have more outsiders, the publication of their financial statements may have greater signaling effects. Anandarajan *et al.* (2005) stated that a publicly traded bank has incentives to manage earnings because such banks are examined in detail by their stakeholders, board members, and potential investors. The authors expected a positive relationship. However, the opposite can also be argued. Smaller banks, which normally are not publicly traded, often have fewer opportunities for diversification. Thus, these banks have incentives to seek greater profitability through more risky activities, which

would encourage these banks to deliver results that cover up these risky activities. Fonseca and González (2008) stated that regulators focus on supervision of the larger banks because the larger banks have greater systemic importance and are consequently at the center of any banking crisis. Balboa *et al.* (2013) raised a question about the reputational issue because when managers perform earnings management, others can monitor their behavior, which results in the repression of this behavior.

- **service earnings in relation to total assets**. Higher service earnings may indicate that a bank depends less on traditional credit activities. According to Anandarajan *et al.* (2005), it would therefore be plausible that these banks are more active in allocating the appropriate credit reserves to present the image of being a “safer” institution. The reverse can also be argued, in the sense that banks with higher revenue from services may practice more aggressive banking activities. These banks may then have higher credit risk and compensate for this increased risk through higher expenditures on provisions to manage an uncertain future. The author stated that it is not possible to predict the sign (positive or negative) of this relationship.
- **provisions in excess (dummy variable)**. Based on Resolution 2682 discussed above, Brazilian banks must have a minimum level of provisions they must hold according to the risk profile of their loan portfolios (the risk profile is determined by the credit rating categories AA to H). The Resolution determines the minimum provisions, and each bank has the discretion to hold provisions above what is defined in the regulation if it deems it necessary. This variable takes a value of one if the bank holds provisions above the minimum requirement, meaning that there is a discretionary portion associated with the provision account.
- **amount of the provisions in excess**. If a bank holds provisions above the minimum required by Resolution 2682, this variable determines the amount of the excess provisions in relation to total assets.
- **GDP growth**. Some behaviors of managers can be explained by factors in a bank’s economic environment. The GDP growth variable is a natural indicator of the aggregate business cycle and captures the general conditions of the economy; thus, it is an external indicator of credit risk (Balboa *et al.*, 2013). It is expected that the cyclical component of expenses on provisions is negatively correlated with this variable. The Risk Management Theory emphasizes the interests of supervisors in reducing the cyclical nature of capital and provision expenses. Following the subjective criteria of Resolution 2682 discussed above, banks define a protection level against expected losses (through the definition of their optimal coverage level) and increase their capital in accordance with the non-expected loss. In other words, loan loss reserves are established in periods of economic growth, and losses – and therefore the use of these reserves – occur

in periods of recession. Thus, the establishment of a credit reserve has a cyclical nature (El Sood, 2012; Fonseca & González, 2008).

- **unemployment.** The unemployment variable was used by Anandarajan *et al.* (2003) as an indicator of economic activity. An increase in unemployment could mean an economic depression that can increase the credit risk of banks, forcing the banks to increase expenditures on provisions.
- **financial crisis.** The years of the financial crisis are used as a control variable. To define which years are considered crisis years, we use the criterion suggested by El Sood (2012), which considers 2007-2009 as the years of crisis. There may be a change in the provisioning behavior of banks during periods of financial instability.

The use of the years 2001-2012 as control variables to control the time effect in the tested model was considered and evaluated. However, because there are few observations in some years, the use of these variables was discarded. See Table 3.

### 3.3. Econometric model

Because “detailed regulations on building 340f reserves are lacking [...]” stated Bornemann *et al.* (2012, p. 2410), “[...] banks can use this account at their own discretion”. Thus, data on the 340f account have the great advantage of not requiring a distinction between the discretionary and the non-discretionary portions. In the present study, this distinction is necessary because we use the loan loss provision account as a dependent variable. Zenderski (2005) also made this distinction and identified the discretionary and non-discretionary components of expenditures on loan loss provisions.

As discussed in Section 2, the loan loss provision account has discretionary and non-discretionary components. McNichols (2000) highlighted the importance of properly isolating these two components in studies on earnings management. Kanagaretnam *et al.* (2010) used a two-stage approach where the first stage aimed to identify the normal, or non-discretionary, estimators of the provision expenditure account. In the first equation, Kanagaretnam *et al.* (2010) used the variables “beginning loan loss allowance”, “write-offs”, “change in total loans outstanding”, “total loans outstanding”, “non-performing loans” and “loan categories”. The residuals from the first regression were the abnormal, or discretionary, component of the provision. In the second stage, the authors tested the relationship between the residuals of the first regression and the object of study.

Deboskey and Jiang (2012) used a similar methodology. In the first equation, he sought to identify the non-discretionary portion using control variables that captured various attributes of the financial institution’s loan portfolio and that may have explained the variation in the loan loss provision account. In the

second step, the residuals of the first regression were used as the discretionary component of the loan loss provision account. Zenderski (2005) also followed this methodology of isolating the discretionary and the non-discretionary components of the provision accounts.

According to Kanagaretnam, Lobo and Mathieu (2003), a two-stage estimation is inconvenient because it underestimates the absolute value of the regression coefficients of the second stage. Additionally, to increase the reliability of the empirical results, Zenderski (2005) found that the use of one-stage estimations showed the same results as two-stage regressions. Likewise, El Sood (2012) used a one-stage regression, isolating the discretionary component of the loan loss provision through variable control elements that were considered non-discretionary. The author used three control variables as indicators of the non-discretionary component of the provision accounts.

In the present study, we have the great advantage of having a database with the credit balances classified by the categories AA – H and, from the rules found in Resolution 2682, it is possible to calculate the minimum mandatory provision for each financial institution. The difference between the effective provision and the minimum required provision is the discretionary provision made by the bank. So we can use a one-stage regression to solve the problem.

The investigation of hypotheses H1, H2, and H3 is performed using the equation [1]. The sample for this study combines annual observations from various banks over a period of time (2001-2012); therefore, to test hypotheses H1 to H3, we use panel data methodology, which combines time series and cross-sectional observations.

$$llp_{it} = \beta_0 + \beta_1 in\_assets_t + \beta_2 pubtrad\_dummy_t + \beta_3 serv\_assets_t + \beta_4 GDP_t + \beta_5 unempl_t + \beta_6 prov\_excess\_dunny_t + \beta_7 excess\_prov_t + \beta_8 d\_loss_t + \beta_9 d\_prev\_year_t + \beta_{10} d\_peer_t + c_1 + d_t + \varepsilon_t \quad [1]$$

where  $c_i$  is the financial institution unobserved effect,  $d_t$  is the time unobserved effect, and  $\varepsilon_{it}$  is the idiosyncratic error.

The variables that use balance data were normalized by the total assets for the period. This procedure was adopted following the methodology suggested by Brown *et al.* (2009) to avoid the problem of scale effect. Other authors followed a similar methodology (Balboa *et al.*, 2013; Bornemann *et al.*, 2012; Shrieves & Dahl, 2003).

We use a one-stage model to determine the discretionary portion of the loan loss provision account. This process aims to isolate the discretionary component of the loan loss provision through control variables of elements that are considered non-discretionary. The control variables included in the model for this purpose are **d\_prov\_excess** and **excess\_prov**. We have the great advantage of having balance data for Brazil that

Table 3

**Summary of Variables Used in the Model, Expected Sign, the Definitions and the References that Used These Variables**

Variable	Expected Sign	Definition	References
% expense with credit provisions/total assets [llp]	---	Expense with credit provisions in the period	Anandarajan <i>et al.</i> (2005) Bornemann <i>et al.</i> (2012) El Sood (2012) Fonseca and González (2008)
% expense with credit provisions/total assets of previous period [llp(-1)]	(+)	Expense with credit provisions in the previous period	Bornemann <i>et al.</i> (2012)
% net income/total assets [ni_assets]	(+)	Accounting net income in the period	Anandarajan <i>et al.</i> (2005) Bornemann <i>et al.</i> (2012) El Sood (2012) Fonseca and González (2008)
1= publicly traded [d_pubtrad]	(+) or (-)	May have different incentives for earnings management in publicly traded banks	Anandarajan <i>et al.</i> (2005) Balboa <i>et al.</i> (2013) Fonseca and Gonzales (2008)
% Services income/total assets [serv_assets]	(?)	Indicates the dependence of the bank in relation to credit activities	Anandarajan <i>et al.</i> (2005)
1= bank has provisions in excess regarding the regulatory minimum [d_prov_excess]	(+)	Indicates banks that use discretion in credit provisioning	Resolução 2682, December 21, 1999
% Value of the provisions excess/total assets [excess_prov]	(?)	Provision excess regarding the required regulatory minimum	Resolução 2682, December 21, 1999
% GDP growth [GDP]	(-)	Macroeconomic environment factors influence the behavior of the bank	Balboa <i>et al.</i> (2013) El Sood (2012) Fonseca and Gonzalez (2008)
% Unemployment [unempl]	(+)	Macroeconomic environment factors influence the behavior of the bank	Anandarajan <i>et al.</i> (2003) Bornemann <i>et al.</i> (2012)
1= years of crisis (2007-2009) [d_crisis]	(?)	Aims to investigate behavior changes in periods of crisis	El Sood (2012)
1= net income below zero in the period [d_loss (H1)]	(-)	H1: Investigates if banks seek to avoid net income below zero.	Bornemann <i>et al.</i> (2012)
1= net income below the net income in the previous period [d_prev_year (H2)]	(-)	H2: Investigates if banks seek to avoid decreases in net income in relation to the previous period	Bornemann <i>et al.</i> (2012)
1= net income below the net income in the previous period of the respective peer group [d_peer (H3)]	(-)	H3: Investigates if banks seek to avoid decreases in the net income with credit provisions and taxes in relation to the previous period of a determined peer group	Bornemann <i>et al.</i> (2012)

**Note:** Net income refer to "net income excluding credit provisions and taxes".

allow us to identify the portion of the provision stock that is discretionary, or unidentified. These control variables aim to identify the discretionary portion of the provision expenditure account.

To examine hypotheses H1 to H3, we fit the panel data regression by two-stage least squares (2SLS) method to control for the potential endogeneity between the variables used in the model that originate from the same year balance sheet data. One

concern in estimating the existence of earnings management in banks is the possible endogeneity existing between loan loss provision (llp) and the other control variables originating from the balance sheet or the earnings statement (**ni\_assets**, **serv\_assets**, and **excess\_prov**). This could occur because the dependent variable and some of the independent variables use balance sheet data from the same fiscal year, there is these variables are simultaneously determined.

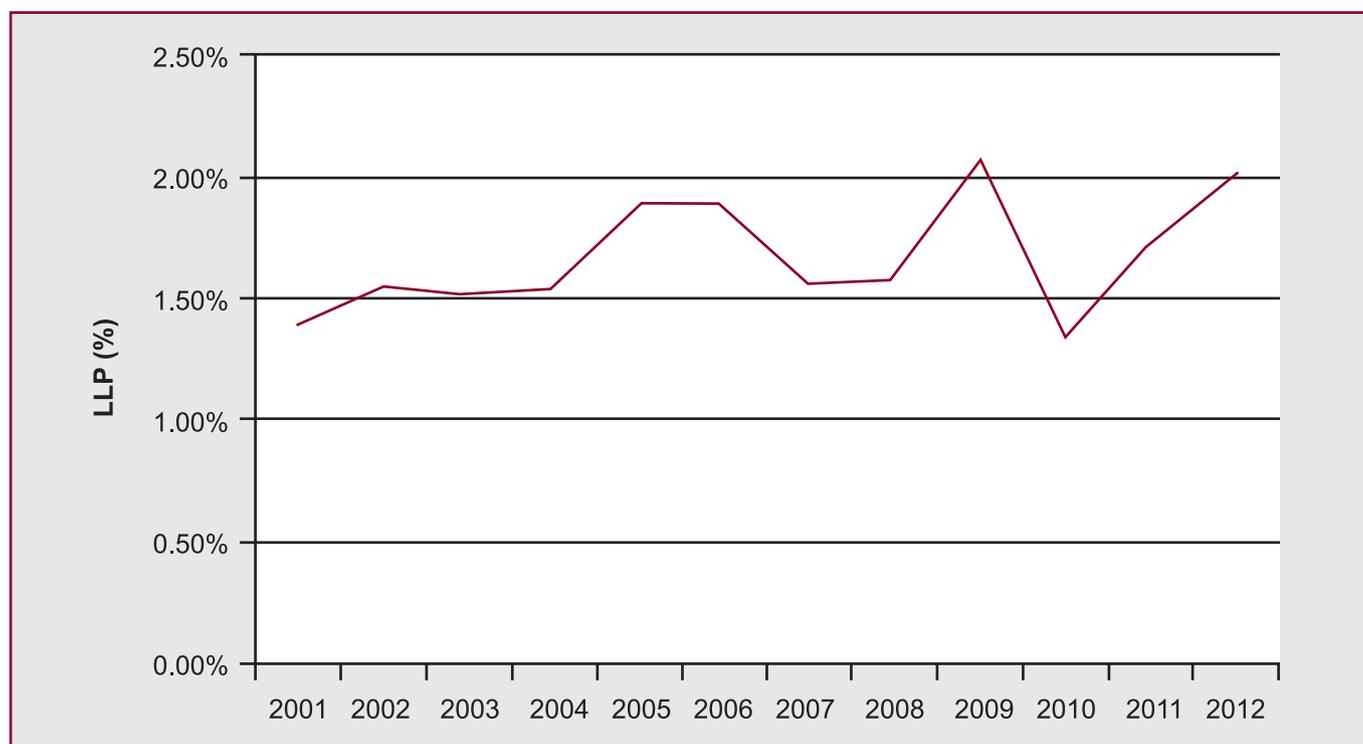
The idea of the 2SLS estimation method is to use a set of variables, called instruments that should be correlated with the endogenous variables and that are not correlated to the error term. Studying earnings management, Fonseca and González (2008) expressed concern about endogeneity when using instruments based on lagged explanatory variables. Then we use as instruments the lagged variables for all endogenous explanatory variables from the balance sheet. These instrumental variables have a direct effect on the endogenous explanatory variable, it is partially correlated with the endogenous variable, and it has no direct effect on the dependent variable. See Greene (2010) and Wooldridge (2002) for details.

#### 4. RESULTS

Figure 1 presents the annual average percentual expense with credit provisions. It may be noted that Brazilian financial

institutions have spent on average between 1.5% and 2.0% with credit provision, with little variation over time. The descriptive analysis of the numeric variables in the period is presented in Table 4. Although the majority of financial institutions present little bit spent on credit provision, there is a high dispersion, with some institutions that spend just over 30% with credit provision. This same pattern can be observed for net income and services income.

Table 5 presents the statistical description of the categorical variables and the average expense with credit provisions by categories. Descriptively, we can verify that financial institutions which showed negative net income in the previous period had lower spending on credit provision on average, compared to those with a positive net income (1.34% *versus* 1.80%, respectively), which is in line with the hypothesis 1 (H1). The descriptive analysis also confirms the hypothesis 2 (H2), since financial institutions with lower net profit than the previous period also had lower average spending on credit provision, compared to the others (1.42% *versus* 2.04%). It is also noticed that financial institutions with net profit lower than the previous net income of its peer group had a slightly higher spending on credit provision in relation to the other (1.84% *versus* 1.70%), contradicting the hypothesis 3 (H3). It is still possible to see that publicly traded financial institutions have less spending on credit provision than others, and those financial institutions with provision in excess in relation to



**Figure 1: Annual Average % Expense With Credit Provisions (LLP)**

Table 4

**Descriptive Analysis of the Numerical Variables in the Period (Sample Size, Mean, Standard Deviation, Minimum and Maximum)**

Variable	N	Mean	Std. Dev.	Min	Max
llp	1213	1.80	2.91	0.00	31.99
ni_assets	1361	4.00	6.25	-87.30	40.53
serv_assets	1263	2.97	6.81	0.00	74.80
GDP	1375	11.75	3.13	6.26	16.38
unempl	1500	7.83	2.18	4.60	10.90
excess_prov	1196	0.17	0.45	0.00	5.38

**Notes:** llp: % expense with credit provisions/total assets  
ni\_assets: % net income/total assets  
serv\_assets: % services income/ total assets  
GDP: % GDP growth  
unempl: % Unemployment  
excess\_prov: % provisions excess/total assets

Table 5

**Statistical Description of the Categorical Variables and Average % Expense With Credit Provisions by Categories (Mean, Standard Deviation, Minimum and Maximum Values)**

Variable	Category	n (%)	% Expense With Credit Provisions			
			Mean	Std. Dev.	Min	Max
d_pubtrad	0	1031 (85.07)	1.83	3.07	0.00	31.99
	1	181 (14.93)	1.56	1.76	0.21	16.63
d_prov_excess	0	638 (54.86)	1.68	2.96	0.00	31.99
	1	525 (45.14)	2.03	2.95	0.00	22.05
d_crisis	0	899 (74.17)	1.79	2.99	0.00	31.99
	1	313 (25.83)	1.72	2.67	0.00	19.56
d_loss	0	1090 (89.93)	1.72	2.90	0.00	31.99
	1	122 (10.07)	1.34	3.03	0.00	16.63
d_prev_year	0	707 (63.18)	2.04	3.02	0.00	22.05
	1	412 (36.82)	1.42	2.79	0.00	31.99
d_peer	0	219 (19.57)	1.70	2.41	0.00	15.75
	1	900 (80.43)	1.84	3.07	0.00	31.99

**Notes:** d\_pubtrad: 1= publicly traded  
d\_prov\_excess: 1= bank has provisions in excess regarding the regulatory minimum  
d\_crisis: 1= years of crisis (2007-2009)  
d\_loss: 1= net income below zero in the period  
d\_prev\_year: 1= net income below the net income in the previous period  
d\_peer: 1= net income below the net income in the previous period of the respective peer group

minimum regulatory spend more on average than the others. The period of crisis did not change the average spending on credit provision of Brazilian financial institutions.

We checked the correlations between the explanatory variables in the model to indicate the level of multicollinearity. Using the criteria in Gujarati (2006), we conclude that no correlation was large enough to cause problems because none of them is higher than 0.8 in module. The highest correlation value was between the percentage of expense with credit provisions and the percentage of net income (0.46) and there was a moderate correlation between GDP growth and unemployment (0.45).

For the analysis of the hypotheses H1 to H3, we estimate five regression models that are used to predict the existence or non-existence of earnings management in Brazilian financial institutions at the period of 2001 to 2012, see Table 6. The Model 1 is the baseline model that contains only the control variables; Models 2, 3 and 4 test separately the hypotheses H1, H2 and H3, respectively; while Model 5 is used to compare the hypotheses among themselves. The five estimated models had similar results for sign and for statistical significance of the variables, so we focus our analysis on the description of the full model (Model 5).

First, there is a positive and statistically significant relationship between the expense with credit provisions and the net income. This result corresponds to the expected sign and characterizes the practice of income smoothing by Brazilian financial institutions at the period. There is a strong dependence on the spent provision today compared to the previous period, indicating the persistence of this type of expenditure. In other words, each financial institution has a standard for such spending, and those that spend more tend to always spend more, while those that spend less tend to always spend less, as if there was an inertia in corporate balance sheets.

We found strong evidences that banks seek to avoid negative net income pre-loan loss provisions and taxes (H1). As we code 1 for negative net income and 0 for positive and zero income, the coefficient has the expected sign (-), meaning that net income excluding loan loss provisions and taxes is positively correlated with loan loss provision expenditures. The higher/lower the profit, the higher/lower the incentive for management to increase/decrease the expenditures on provisions to reduce/increase the net income in the period.

The results show that there is a strong positive association between  $d\_loss$  and  $llp$ , and the  $p$ -value of  $d\_loss$  is statistically significant at the 1% level. This result means that managers seek to avoid a decrease in profits in relation to the previous period. In this case, considering those banks with negative net incomes spent approximately 0.9 percentage points (pp) less with credit provision than those banks with positive and null net incomes, *ceteris paribus*.

This result is in line with that of Degeorge *et al.* (1999), who also found evidence that banks use thresholds to show

positive net income. In Brazil, this result is expected because the primary metric used for profitability analysis is the evaluation of net income above zero.

We also found evidence that banks avoid negative net income pre-loan loss provisions and taxes in relation to the previous period (H2). The  $p$ -value of coefficient of  $d\_prev\_years$  is significantly negative at 1% level. As  $d\_prev\_years = 1$  represents net income below the previous year ( $d\_prev\_years = 0$  represents net income above or equal the previous year), negative coefficient shows that banks with net income below the net income in the previous period spent approximately 0.42 pp less with credit provision than those banks with net income above or equal net incomes of previous periods, *ceteris paribus*.

This result shows that banks seek income smoothing and avoid showing net income below their net income in the previous period. “Net income excluding loan loss provisions and taxes” below the “net income excluding loan loss provisions and taxes” of the previous period is positively correlated with “expenses for loan loss provisions”.

Analysts estimate not only the profits during a period but also the evolution of the profitability of a financial institution. Thus, it is expected that a bank always seeks to obtain increasing profits so it does not show a deceleration in profitability, which could attract attention to the institution’s financial situation.

Finally, we could not find support evidence that banks seek to avoid negative net income pre-loan loss provisions and taxes in relation to the previous period of a given peer group (H3). The  $p$ -value of  $d\_peer$  is not statistically significant at the 5% level. This result shows that there is no evidence that managers seek to meet a profitability benchmark of the industry or its peer group of banks. It is not clear if they tend to avoid a decrease in net income compared with this peer group.

The joint analysis of the hypotheses using Equation [i] shows that H1 has a coefficient that is nearly four times higher than H2 and eleven times higher than H3. This result shows that the main objective of managers in relation to earnings management is to avoid showing negative net income. The second objective is to avoid showing decreases in net income compared with the previous period, and, finally, the third objective sought by managers is to prevent decreases in net income compared with a peer group.

This “hierarchy” of the goals sought by management is justifiable in the sense that the net income in the period is the primary metric for the profitability of a financial institution. Showing negative net income requires explanations to analysts and investors and, depending on the magnitude, can affect a bank’s capitalization, thus calling the attention of regulators. This hierarchy is aligned with that presented by Degeorge *et al.* (1999) and had not yet been tested in Brazil.

Showing a decrease in net income from the previous period does not necessarily mean that a bank reported a loss. A bank may show a decrease in profitability but still have positive net income. This situation most likely requires explanation, but it

Table 6

**Estimated Coefficients and Standard Errors (in Parentheses) for the Regression Model With Panel Data Using 2SLS and Random Effects**

Explanatory Variable	Dependent Variable: % Expense With Credit Provisions/Total Assets				
	Model 1	Model 2	Model 3	Model 4	Model 5
llp (-1)	0.5931*** (0.0681)	0.5127*** (0.0375)	0.5891*** (0.0283)	0.5924*** (0.0292)	0.5640*** (0.0311)
ni_assets	0.1030*** (0.0359)	0.1456*** (0.0385)	0.1097*** (0.0237)	0.1026*** (0.0255)	0.1377*** (0.0287)
d_pubtrad	-0.2475** (0.1044)	-0.1286 (0.2197)	-0.2866 (0.1800)	-0.2213 (0.1815)	-0.1689** (0.1827)
serv_assets	-0.0010 (0.0043)	-0.0012 (0.0141)	-0.0017 (0.0118)	-0.0015 (0.0119)	-0.0045 (0.0118)
GDP	-0.0872*** (0.0175)	-0.0827*** (0.0224)	-0.0826*** (0.0215)	-0.0877*** (0.0215)	-0.0789*** (0.0213)
Unempl	0.0244 (0.0325)	0.0168 (0.0383)	0.0125 (0.0347)	0.0278 (0.0356)	0.0099 (0.0347)
d_prov_excess	0.2673* (0.1533)	0.3023 (0.1908)	0.2414 (0.1602)	0.2850* (0.1620)	0.2858* (0.1593)
excess_prov	-0.1107 (0.2395)	-0.0410 (0.3078)	-0.0666 (0.2435)	-0.1102 (0.2460)	-0.0793 (0.2406)
d_crisis	-0.1287 (0.2342)	-0.1278 (0.1474)	-0.1340 (0.1408)	-0.1298 (0.1411)	-0.1339 (0.1391)
d_loss (H <sub>1</sub> )	---	-0.8974** (0.4097)	---	---	-1.0252*** (0.3174)
d_prev_year (H <sub>2</sub> )	---	---	-0.3256** (0.1546)	---	-0.4198*** (0.1503)
d_peer (H <sub>3</sub> )	---	---	---	0.1430 (0.1616)	0.1626 (0.1617)
Constant	1.1872*** (0.2538)	1.0621*** (0.3309)	1.3331*** (0.3079)	1.0454*** (0.3410)	1.0235*** (0.3415)
R <sup>2</sup> overall	0.5109	0.5203	0.5158	0.5111	0.5271
Adjusted R <sup>2</sup>	0.5064	0.5090	0.5108	0.5061	0.5211

**Notes:** \* Significant at 10%, \*\* Significant at 5%, \*\*\* Significant at 1%

llp\_1: % expense with credit provisions/total assets of previous period

ni\_assets: % net income/total assets

d\_pubtrad: 1= publicly traded

serv\_assets: % services income/ total assets

GDP: % GDP growth

unempl: % Unemployment

d\_prov\_excess: 1= bank has provisions in excess regarding the regulatory minimum

excess\_prov: % provisions excess/total assets

d\_crisis: 1= years of crisis (2007-2009)

d\_loss: 1= net income below zero in the period

d\_prev\_year: 1= net income below the net income in the previous period

d\_peer: 1= net income below the net income in the previous period of the respective peer group

may have less relevance. However, it is virtually mandatory for analysts to perform a historical trend analysis of the profitability of a financial institution.

The most significant control variable in all of the tested equations is GDP growth, which shows the importance of the economic cycle in a bank's credit provisioning.

## 5. CONCLUSION

The present study aims to study earnings management in a significant sample of banks in the Brazilian market between 2001 and 2012. Given the important role that banks play in a country's economy, it is important to understand that there are discretionary factors involved in the reporting of a financial institution's profitability. Because managers utilize accounting criteria established in regulations, earnings management is not an illegal practice. However, this behavior does affect the risk perception of agents and analysts, and they should be aware of it and understand it.

Authors abroad have used the methods that we apply to the Brazilian market, and we find similar results. Bornemann *et al.* (2012) confirmed the practice of earnings management using a particularity of the German system that cannot be applied to Brazil. The authors found that German banks avoid showing negative net income, avoid showing decreases in profits relative to the previous period, and avoid showing decreases in profits in relation to their peer group's previous period. The reserve in the German system is used in a discretionary manner by the banks. Bornemann *et al.* (2012) did not use a two-stage regression (2SLS), but we still find similar results. Likewise, our results are similar to those of DeGeorge *et al.* (1999), who carried out a study of the hierarchy of earnings management practices that resulted from focusing on publicly traded companies. We note that the results found by DeGeorge *et al.* (1999) also apply to financial institutions because they are evaluated closely by both regulators and investors.

The results from this study show that Brazilian banks perform earnings management. Two out three of the tested hypotheses show statistically significant results. They are: (i) Banks seek to avoid negative net income pre-loan loss provisions and taxes; (ii) Banks seek to avoid negative net income pre-loan loss provisions and taxes in relation to the previous period. Contrary to the previous studies, it is not clear if banks seek to avoid negative net income pre-loan loss provisions and taxes in relation to the previous period of a given peer group.

This study's had main contribution is its identification of a hierarchy of earnings management practices that had not yet been tested in Brazil. We also use a model with two-stage panel data (2SLS) for the first time in this context. We are able to prove the existence of a management mechanism with an instrumental variable, which proves that earnings management is practiced through loan loss provision accounts. This result also proves that managers use gradual adjustments that may be reflected in subsequent periods.

So far, there has been little media attention on the practice of earnings management in banks, and interest has remained restricted to the academic world and analysts. In this context, the aim of this study is to create greater transparency regarding the information that is disclosed on the balance sheets of financial institutions. Analysts are frequently faced with credit ratings that do not reflect a client's actual risk because imprecise information is provided about financial institutions' real risk. Other earnings management practices are also common, such as presenting higher net annual balance sheets using loans that last for only one day. Awareness of these financial imperfections is important to properly assess a financial institution's risk from the perspective of a regulator, an analyst, or an investor.

As an extension of this research, we suggest that future examinations of this subject use one specific analysis of earnings management in Brazilian banks during the crisis period. We also suggest investigating the behavior of different segments of banks in relation to earnings management. ♦

## REFERENCES

- Ahmed, A. S., Takeda, C., & Thomas, S. (1999). Bank loan loss provisions: a reexamination of capital management, earnings management and signaling effect. *Journal of Accounting and Economics*, 28(1), 1-25.
- Anandarajan, A., Hasan, I., & Vivas, A. L. (2003). The role of loan loss provisions in earnings management, capital management, and signaling: The Spanish experience. *Advances in International Accounting*, 16, 45-65.
- Anandarajan, A., Hasan, I., & Vivas, A. L. (2005). Loan loss provision decisions: An empirical analysis of the Spanish depository institutions. *Journal of International Accounting, Auditing and Taxation*, 14(1), 55-77.
- Assaf, A. (2007). *Estrutura e análise de balanços: Um enfoque econômico-financeiro*. (8a ed.). São Paulo: Atlas.
- Balboa, M., López-Espinosa, G., & Rubia, A. (2013). Nonlinear dynamics in discretionary accruals: An analysis of bank loan-loss provisions. *Journal of Banking & Finance*, 37(12), 5186-5207.
- Bornemann, S., Kick, T., Memmel, C., & Pfingsten, A. (2012). Are banks using hidden reserves to beat earnings benchmarks? Evidence from Germany. *Journal of Banking & Finance*, 36(8), 2403-2415.
- Brown, M., Jappelli, T., & Pagano, M. (2009). Information sharing and credit: Firm-level evidence from transition countries. *Journal of Financial Intermediation*, 18(2), 151-172.
- Corrar, L. J., & Gabriel, F. (2010). Gerenciamento de resultados e de capital no sistema bancário brasileiro – uma

- investigação empírica nas aplicações em títulos e valores mobiliários. *Revista de Contabilidade do Mestrado em Ciências Contábeis da UERJ*, 15(2), 49-62.
- Dantas, J. A., Galdi, F. C., Capelletto, L. R., & Medeiros, O. R. (2013). Discricionariedade na mensuração de derivativos como mecanismo de gerenciamento de resultados em bancos. *Revista Brasileira de Finanças*, 11(1), 17-48.
- Dantas, J. A., Medeiros, O. R., Galdi, F. C., & Costa, F. M. (2013). Gerenciamento de resultados em bancos com uso de TVM: Validação de modelos de dois estágios. *RC&F – Revista Contabilidade e Finanças*, 24(61), 37-54.
- DeBoskey, D. G., & Jiang, W. (2012). Earnings management and auditor specialization in the post-sox era: An examination of the banking industry. *Journal of Banking & Finance*, 36(2), 613-623.
- Dechow, M., & Skinner, D. J. (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, 14(2), 235-250.
- DeGeorge, F., Patel, J., & Zeckhauser, R. (1999). Earning management to exceed threshold. *The Journal of Business*, 72(1), 1-33.
- El Sood, H. A. (2012). Loan loss provisioning and income smoothing in US banks pre and post the financial crisis. *International Review of Financial Analysis*, 25, 64-72.
- Fonseca, A. R., & González, F. (2008). Cross-country determinants of bank income smoothing by managing loan-loss provisions. *Journal of Banking & Finance*, 32(2), 217-228.
- Galdi, F. C., & Camara, G. A. (2012). Securitização como mecanismo de gerenciamento de resultado em bancos brasileiros. *XXXVI Encontro da ANPAD*, Rio de Janeiro. Rio de Janeiro: ANPAD.
- Galdi, F. C., & Pereira L. (2007). *Fair value* dos derivativos e gerenciamento de resultados nos bancos brasileiros: Existe manipulação? *Encontro Brasileiro de Finanças – SBFIN*, 7, São Paulo. São Paulo: SBFIN.
- González, A. (2007). *Resilience of Microfinance Institutions to National Macroeconomic Events: An Econometric Analysis of MFI Asset Quality*. MIX Discussion Paper n. 1. Available at SSRN: <http://ssrn.com/abstract=1004568> or <http://dx.doi.org/10.2139/ssrn.1004568>.
- Goulart, A. (2007). *Gerenciamento de resultados contábeis em instituições financeiras no Brasil*. (Tese de doutorado) – Programa de Pós-Graduação em Contabilidade, Universidade de São Paulo, São Paulo, SP, Brasil.
- Greene, W. (2010). *Econometric analysis*. (5a ed.). New Jersey: Prentice Hall Inc.
- Gujarati, D. N. (2006). *Econometria básica*. (4a ed.). Rio de Janeiro: Elsevier.
- Kanagaretnam, K., Lobo, G., & Mathieu, R. (2003). Managerial incentives for income smoothing through bank loan loss provisions. *Review of Quantitative Finance and Accounting*, 20(1), 63-80.
- Kanagaretnam, K., Lobo, G. J., & Yang, D. (2005). Determinants of signaling by banks through loan loss provisions. *Journal of Business Research*, 58(3), 312-320.
- Kanagaretnam, K., Lim, C. Y., & Lobo, G. J. (2010). Auditor reputation and earnings management: International evidence from the banking industry. *Journal of Banking & Finance*, 34(10), 2318-2327.
- Martinez, A. L. (2001). *Gerenciamento de resultados contábeis: Estudo empírico das companhias abertas brasileiras*. (Tese Doutorado em Ciências Contábeis) – Departamento de Contabilidade e Atuária, Universidade de São Paulo, São Paulo, SP, Brasil.
- McNichols, M. F. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy*, 19(4), 313-345.
- Parente, G. (2000). As novas normas de classificação de risco de crédito e o disclosure das provisões. In *Semana de Contabilidade do Banco Central do Brasil*, 9, São Paulo.
- Shrieves, R. E., & Dahl, D. (2003). Discretionary accounting and the behavior of Japanese banks under financial duress. *Journal of Banking & Finance*, 27(7), 1219-1243.
- Wooldridge, J. M. (2002). *Introductory econometrics: A modern approach*. South-Western: CENGAGE Learning.
- Zenderski, H. (2005). *Gerenciamento de resultados em instituições financeiras no Brasil – 2000 a 2004*. Dissertação de Mestrado) – Programa de Pós-Graduação em Contabilidade, Universidade de Brasília, Brasília, DF, Brasil.

### Earning management in Brazilian financial institutions

The present study aims to study earnings management in a significant sample of 123 banks in the Brazilian market between 2001 and 2012. Given the important role that banks play in a country's economy, it is important to understand that there are discretionary factors involved in the reporting of a financial institution's profitability. Credit provisioning guidelines for Brazilian financial institutions are described in Resolution 2682/99 of the National Monetary Council (*Conselho Monetário Nacional*). Because of the discretion allowed in this resolution, loan loss provision is used as instrument of earnings management, which is not an illegal practice, but this behavior does affect the risk perception

## ABSTRACT

of agents and analysts, and they should be aware of it and understand it. We found that credit provisioning is used as an earnings management mechanism to smooth the net income of Brazilian financial institutions. Brazilian banks tend to avoid not only negative net income pre-loan loss provisions and taxes, but also negative net income pre-loan loss provisions and taxes in relation to the previous period. Contrary to the previous studies, it is not clear if banks avoid lower net income pre-loan loss provisions and taxes than a given peer group.

**Keywords:** Brazilian financial institutions, earning management, loan loss provision, panel data regression.

## RESUMEN

### Gestión de resultados en instituciones financieras en Brasil

El objetivo en este trabajo es estudiar la gestión de resultados en una muestra representativa de 123 bancos en el mercado brasileño, entre 2001 y 2012. Teniendo en cuenta el importante papel que desempeñan los bancos en la economía de un país, es necesario entender que hay factores discrecionales implicados en la información sobre la rentabilidad de una institución financiera. Normas de asignación de crédito para las instituciones financieras brasileñas se describen en la Resolución 2682/99 del Consejo Monetario Nacional. Debido a la discrecionalidad permitida en la resolución, la provisión para pérdidas de crédito se utiliza como herramienta de gestión de resultados, lo que no es una práctica ilegal, sin embargo, este comportamiento afecta a la percepción de riesgo de los agentes y analistas, que deben ser conscientes de eso y entenderlo. Los resultados muestran que la asignación de crédito se utiliza como un mecanismo de gestión de resultados para suavizar el beneficio neto de las instituciones financieras brasileñas. Los bancos tratan de evitar no sólo el beneficio neto antes de gastos con provisión e impuestos negativo, sino también el beneficio neto antes de gastos con provisión e impuestos inferior en relación con el período anterior. A diferencia de lo que indican estudios anteriores, no está claro si los bancos buscan evitar el beneficio neto inferior a un determinado grupo de pares.

**Palabras clave:** instituciones financieras brasileñas, gestión de resultados, asignación de crédito, regresión con datos de panel.

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