

Book-tax differences (BTD) of Brazilian banks between 2004 and 2014: *a study focusing the taxes aggressiveness and the earning management.*

ABSTRACT

This paper has investigated the difference between book profit and tax profit (BTD) of Brazilian banks in the period of 2004 to 2014. Empirical tests were made to identify the main factors influencing BTD. The tests of multiple regressions were applied in a sample of 1,508 observations, in a total of 187 banking institutions. The results showed that an abnormal BTD is explained by the regulatory capital, by earning management, through the loan loss provision, and by tax aggressiveness, not only because of the choices related to corporate reorganizations events, but also due the choices connected to cross-border investments.

Keywords: *Book-tax differences* (BTD); earning management, tax aggressiveness, Brazilian banks

1 INTRODUCTION

The difference between tax profit and book profit raises a series of inciting questions for the research in accounting. In addition to showing the degree of tax aggressiveness, the BTD (book-tax difference) has been object of empirical studies about profit quality or for the prediction of future outcomes (Graham, Raedy & Shackelford, 2012; Hanlon & Heitzman, 2010). Besides the factors inherent to the application of different criteria to acknowledge incomes and expenses – which usually drive the difference between the two earnings (the book and the tax) –, there might be other events resulting from the choices of agents that raise or reduce the book-tax gap. The discretion on the accruals accounting – such as the operations of loan loss provision– allows managers to manage the entities' earnings. Other discretionary actions are the ones aiming to reduce the cost with taxes over profit, that is, the practices related to tax avoidance (Hanlon & Heitzman, 2010) or tax aggressiveness (Chen, Chen, Cheng & Shevlin, 2010; Frank, Lynch & Rego, 2009). In that case, rather than being an exclusive consequence of a natural or normal mechanism, or the misalignment between the book standards and the tax legislation, the earning difference between the two bases of calculation is a result of discretionary actions.

In this paper, the field of analysis was delimited in banks due to the importance of the sector for the economy and to the particularities of this business model. In addition, the activities are regulated in this area, which enables the study of regulation effects over the tax-accounting behavior. Because of the characteristics of their operations of financial intermediation, banks enable earning management options in specific accruals, such as the loan loss provision.

The tax management may influence the earning management. Institutions regulated by Bacen (Central Bank) are required to keep a minimum capital to ensure the system is protected against the risks inherent to the operations of financial intermediation. One of the factors that influence the minimum capital is the tax loss and the assets resulting from temporary tax differences, also called tax credits.

Par excellence, the banks are the agents of financial intermediation, transferring resources from surplus agents to the ones in deficit, making deadlines and volumes compliant, providing the service required to the economic development. They receive resources from millions of depositors in this activity, what claims for careful regulation. As a consequence, the accounting academia can contribute for a better understanding of these economic agents operations by taking the financial statements of banks into account.

This paper will adopt the terminology “tax aggressiveness” as an externalization of the discretionary actions that aim to reduce the tax burden of taxes over profit (Lietz, 2013).

The research in tax accounting in bank institutions was thus opportune to provide a better understanding on the choices of agents, entities or a specific group of entities with relation to the practices that influence the costs with taxes.

BTD has been used in the researches of the accounting area to investigate in an empirical way the tax aggressiveness practice (Desai & Dharmapala, 2006; Frank, Lynch & Rego, 2009; Mills, Newberry & Trautman, 2002). It has also been applied in researches as an alternative measure for the entity's outcome (Hanlon, 2005) and as a proxy to detect the earning management (Ferreira, Martinez & Costa, 2012; Huang & Wang, 2013; Tang, 2005).

From evidences found in previous studies, the premise that Brazilian banks act with discretion to manage earnings is taken. It is also estimated that banks promote choices as a way to reduce the taxes over profit.

As such, the question of this research is created: What are the main factors that explain the difference between accounting profit and the taxable basis of Brazilian banks?

This paper aims to make an empirical evaluation of the factors that influence the BTD variance in Brazilian banks.

The purpose is to identify if the discretionary adjustments are related to the difference between the accounting outcome and the abnormal taxes. Tang (2005) and later Tang and Firth (2011) have developed a two-stage model in which they interpret the BTD as a function of the misalignment between accounting and taxes calculation, earning management and the taxes management. According to the studies, the BTD is classified in two types: the normal BTD, a consequence of the different goals of accounting and taxes calculation; and the abnormal BTD, which results from the discretionary options of managers in both accounting and taxes calculation. The abnormal BTD appears as a *proxy* for the earning management and the tax aggressiveness. An econometric model will be thus adapted to the characteristics of the Brazilian financing sector, based on the one developed by Tang, to identify any earning management and tax aggressiveness practices in the banks of the sample.

The current paper will also analyze the effect of adopting the international accounting standards (IFRS) over the banks' BTD, as well as the impact of the Transitional Tax Regime (RTT). RTT was a solution, so that the adoption of the pronouncement to IFRS would not lead to a bigger tax onus for entities. With this regime, the entities investigated the profit subject to the adjustments to calculate the taxes according to the accounting and taxes criteria in effect in 2007, which aimed the neutrality.

From 2010 on, RTT started to be mandatory for all entities, until its extinction, with the promulgation of Law 12.973/14, which has revoked the transitional regime and regulated the tax effects of adopting new accounting standards. In the case of banks and other institutions regulated by the Central Bank, the process of converging to the pronouncements of the Committee of Accounting Pronouncements (CPC) is partial, since the regulatory body did not approve most part of the new standards to the individual financing statements.

The inference made from the estimation of banks BTD will be limited to the sample and to the period. It is important to note that the study focus only the tax aspects of IRPJ and CSLL (taxes lieved on profits in Brazil), not considering the effect of tax planning over other taxes. In addition, it is relevant to state that papers that investigate BTD in financial institutions with the goals mentioned herein were not found in the national or international academic literature. Therefore, despite the econometric model used for the data analysis in this research is inspired on Tang and Firth (2011) findings, no registration of a specific model for the financial institutions was found in the national and international literature.

This paper is divided in five sections, and the Introduction is the first of them. The second section brings the theoretical support for the paper. The third section comprehends the methodology used to reach the goals and to answer the research's question. The fourth section has the results of the empirical tests with judicious analysis based on previous studies and assumed premises. The fifth section resume the research's subject from the results of the empirical tests, states the conclusions of the paper and presents suggestions for future works.

2.1 Tax aggressiveness

The research in tax accounting, especially account planning, attracts a number of stakeholders. The tax authorities are interested because the planning may frustrate the governmental income with taxes. The investors or shareholders and partners, show interest because they expect managers to raise the value of the company, which includes tax management; and the general public are interested because they want to know if the corporations are being civic and paying taxes in a fair manner (Huseynov & Klamm, 2012).

Hanlon and Heitzman (2010), when updated and summarized the researches in tax accounting in a theoretical essay, approached the tax avoidance concept as follows: a reduction or deliberate minimization of tax costs. The authors define tax avoidance in a broad sense in their paper, as a reduction of the explicit taxes. Based on previous researches, the authors list twelve different measures used to capture the tax management - and BTD (book tax difference) is among them.

According to Tang (2005), companies appeal to the management practices to maximize the return to shareholders, reduce the risk of tax control and political cost, set the compensation parameters of managers after taxes and to meet the market's expectations, since the taxes over profit are critical factors to define prices of assets.

Chen *et al.* (2010) say tax aggressiveness should be considered as any management action that aims the reduction of the tax profit.

This perspective is aligned to the concept board created by Lietz (2013). Based on the difficulties of precisely defining the issues covered in empirical studies of tax accounting, the author proposes a graphic representation as a guide for a better understanding of terms usually employed in researches.

In this representation, a first, continuous line shows the broad planning, or tax management, such as Sholes and Wolsfon's framework (all parts, all taxes and all costs). Right below, in another continuous line, the tax avoidance is located, such as highlighted by Hanlon and Heitzman (2010). However, the focus here is the reduction of explicit taxes.

The conceptual proposition also offers orientation to the application of measures usually employed on empirical researches. As for BTD, if the variable increases, this is because the tax aggressiveness level is higher.

Considering the goal of this study is to examine the discretionary components that may explain the non-normal variation of BTD (ABTD), and according to the conceptual board made by Lietz (2013), the degree of tax aggressiveness of Brazilian banks is evaluated.

Mills, Newberry and Trautman (2002) compare data collected from financial statements with the tax return of American companies to explore the differences between the accounting outcome and the tax basis, or book-tax differences (BTD). The authors observed that BTD have had a significant increase from 1991 to 1998. They also realized that the differences are more expressive in multinational, financial services and communication companies, as well as companies with higher profit.

The taxation of multinational corporations and the tax burden measurement were object of Rego's (2003) research. The researcher tested the ETR of these companies with relation to their size, to the result before taxes (performance), to debts, to the accrued loss and to cross-border operations. The results of the research lead to an ETR with the same sign of the size, which goes against the hypothesis of political cost. As for performance, the result found was that the companies with better performance show lower ETR. Lastly, it was observed that multinational companies show a lower ETR than the domestic ones.

Based on the Accounting Choice Theory Cabello (2012) investigated the adoption of certain tax practices by entities. The data was analyzed from explanatory notes and financial statements of public companies from 2009 to 2010. The companies that employed the following practices were the ones where a lower ETR was shown: a) fast depreciation, b)

encouraged fast depreciation, c) interests over own capital, d) corporate reorganization, and e) tax incentives. The size of the company was another relevant factor for the ETR, which corroborates previous studies. In the model used by the researcher, each dependent variable was stipulated based on the explanatory notes of companies.

Tang (2005) and later Tang and Firth (2011) have investigated the relation between BTM and the earning management, tax management and its interaction with companies listed in the Chinese market. The authors found evidences highlighting that companies with a strong incentive for the tax and earning management show high levels of abnormal BTM. These results suggest BTM can capture signs of both accounting and tax manipulation. In that study, the authors tried to segregate the differences on BTM as normal (coming from the differences between tax rules and accounting rules) and abnormal (a consequence of agents' choices). They have created a model to capture the representative variation of tax management and earning management not explained by normal differences.

The results found by Tang and Firth (2011) confirmed the hypothesis that discretionary choices related to earning management, tax management or both impact the magnitude of abnormal difference between accounting profit and tax profit.

Huang and Wang (2013) found evidences that the banks showing huge temporary differences along the years between accounting and tax profits present higher levels of discretionary LLP than the ones with a lower BTM. They also verified that banks with a higher temporary BTM have less profit persistence and, lastly, did not find any relation between permanent BTM and the quality of profit.

Martinez and Passamani (2014) evaluated the relation between the BTM and the companies' future results. The authors observed the influence of BTM over the estimative of future profit and over the return of shares in open capital Brazilian companies, concluding the informative relevance of BTM.

Studying the ETR of Brazilian public companies, Guimarães, Macedo and Cruz (2016) noted the deferment of taxes, as suggested by the negative sign of deferred taxes with relation to the current ETR. In addition, they verified that the Transitional Tax Regime (RTT) implied a lower tax burden.

The studies mentioned in this subsection demonstrate that the difference between accounting and tax profit is a good measure to capture actions aiming to reduce the explicit tax cost. They show there are incentives to the tax management and suggest what choices impact the cost with tax over profit. The next section will cover the motivations that change the accounting profit parcel of financing institutions.

2.2 Earning management in financial institutions

Healy and Wahlen (1999) state financial institutions are a fertile field for the empirical studies on earning management, highlighting, in the case of banks, the use of loan loss provision because of the high dependence managers have on judgments.

Zendersky (2005) investigated the behavior of accruals coming from the LLP accounting and also from the accounting of non-performed earning or casualties of securities and bonds classified as "for negotiation". To evaluate the earning management practice, the author used the technique of two-stage regression based on Kanagaretnam, Lobo and Mathieu (2003) model. The results prove the income smoothing practice by the banks of the sample.

Goulart (2008) investigated the earning management practice in banks through income smoothing, noting the LLP behavior in credit operations, the variance in the securities portfolio and the securities - because of the mark-to-market - and in the operations with derivatives. The results show that the financial institutions carry out practices of earning smoothing via LLP adjustments in operations with derivatives and mark-to-market of securities. The paper noted the use of LLP was the most important factor to contribute for the smoothing effect.

Dantas, Medeiros, Galdi and Costa (2013) sought income smoothing evidence in banks for discretion in the application in securities using a two-stage model. To assess the income smoothing the authors performed a second regression in which the first error term becomes the dependent variable on the discretionary portion of income from securities. The results of the second regression confirmed the hypothesis of earnings management with the use of securities.

Dantas, Galdi, Capelletto and Medeiros (2013) studied earnings management with the use of derivatives in banks. The premise is that the discretion in the recognition and measurement of derivative instruments provides earnings management in financial institutions. In a model of two-stage, the authors estimated the net position in derivatives by the difference between the asset positions and liabilities. The estimation of the discretionary portion of net positions in derivatives is the difference between the errors of the regressions between the asset and liability positions ($\epsilon_{it} = u_{it} - v_{it}$). Next step the authors evaluated the determinants of the degree of discretion practiced by Brazilian banks in the measurement of derivative instruments. The results confirmed the results of smoothing hypothesis.

The regulation as a control instrument of economic agents can influence the accounting information management. The financial institutions have the possibility to manage the amount of deferral tax assets through LLP as a way to ensure a reference equity that does not bring regulation issues.

In that sense, Junqueira and Nakao (2013) sought evidences around the use of deferred fiscal assets and liabilities as an instrument of achievement and arbitration of regulation capital by financial institutions in the 2004-2009 period. The authors developed the following hypothesis: a) the managers of Brazilian financial institutions use the deferred taxes to fulfill the required limits of regulatory capital; b) the managers of Brazilian financial institutions use deferred taxes as an arbitration instrument of regulatory capital. The results of Junqueira and Nakao (2013) study confirm the first hypothesis in which part of the institutions use the deferred credit to reach the regulatory capital limits. However, their conclusion in terms of capital arbitration was different than the international studies, since they verified a positive relation between the amount of regulatory capital and the deferred tax asset.

2.3 The process of Brazilian banks convergence to the international accounting standards, *book-tax conformity* and the RTT

In the case of financial institutions, the process of converging to international rules has some particular points. The law 11.941/2009 establishes that the financial institutions and other entities with Banco Central's authorization to work, including open capital companies, should observe the provisions of law 4.595/64 for bookkeeping purposes. According to that law, Banco Central is entitled the power to issue accounting rules to be observed by financial and authorized institutions.

It is important to remark in that sense that the regulation body has not approved great part of the pronouncements already edited by CPC (Comitê de Pronunciamentos Contábeis Accounting Pronouncements Committee). The pronouncements applicable to the financial institutions statements are approved by CMN (Conselho Monetário Nacional, National Monetary Council).

However, it is important to acknowledge Banco Central has determined that financial institutions and remaining institutions with authorization to operate according to the regulation body adopted recognition and measurement criteria with financial instruments adherent to the international rules before the creation of Law 11.638/2007. Back in 2001 and 2002, the monetary authority had already changed the rules to recognize and measure the financial instruments (securities and derivatives), when seeking to be aligned with IASB's IAS 39 and the American standard disclosed by the Financial Accounting Standards Board (FASB), FAS 115, both of them approaching the recognition and measurement of financing instruments. So, even if by now the institutions regulated by Banco Central have not yet totally adhered to the international

rules, the mark-to-market effect in the measurement of financial assets was incorporated to the banks' financial statements, before the IFRS was even adopted by the remaining entities.

The convergence process was gradual in the country with the implementation of some pronouncements issued in 2008 and 2009 and with the full adoption starting in 2010. One particularity to be addressed in the adoption of international rules in the country is that the application of the new accounting standards is made individually in the entities.

In order to ensure the convergence to international standards, the Brazilian legislation set out the concept of neutrality in tax, meaning the adoption of new accounting standards should not impact the fiscal outcome. To do that, the Provisional Measure 627/2008 was edited and then converted to the Law 11.941/2009, which instituted the RTT (Regime Tributário de Transição, Transitional Tax Regime).

RTT was a tax calculation regime, which determined that companies had to calculate their outcomes according to the clauses of the commercial law (IFRS standard), make adjustments in the accounting according to the accounting standards effective in December 31st 2007, and calculate the taxes also according to the tax clauses in effect in December 31st, 2007. RTT was optional in 2008 and 2009 and mandatory from 2010 on, being in effect until the tax law had a provision about the tax effects of the adopting IFRS's standards.

Moraes, Macedo and Sauerbronn (2015) have certified that the accounting outcomes after the adoption of the new rules were higher than the 2007 accounting standards. They have also noticed a higher distance between the accounting and tax outcomes with the adoption of the same international rules.

After analyzing the effect of the convergence process to IFRS and RTT on open capital companies, Guimarães, Macedo and Cruz (2016) observed that the new accounting practices suggest the existence of less conservative accounting profits and also a lower tax burden.

These matters bring the discussion about the degree of book-tax conformity. There are controversial empirical studies about the subject.

Blaylock, Gaertner and Shevlin (2015) have not found any evidences that book-tax conformity reduced the earning management practice. On the contrary, the empirical study made with open capital companies of 35 countries from 1996 to 2007 showed an increase of earning management in countries with a higher level of book-tax conformity. On the other hand, when analyzing open capital companies of 32 countries from 1995 to 2007, Tang (2015) has found evidences of a high level of book-tax conformity in the samples. These studies make a classification of the conformity level between the accounting and tax outcomes of the countries. In both researches Brazil stayed among the jurisdictions with higher level of conformity in the period analyzed.

Nakao (2012) studied the breach of the tax accounting conformity and the impact of the IFRS adoption in Brazilian companies in order to evaluate the quality of profit. The research analyzed the effect of the conformity breach in two groups: companies with a higher pressure of the stock market and companies with a lower pressure. The study concluded that the later did not show any qualitative improvement in the information of the financial statement and still keep a high degree of similarity with the tax profit. The companies with a higher pressure of the market showed an improvement in quality, which was expected with the adoption of IFRS, but still demonstrated a certain level of similitude between tax and accounting outcomes.

It is important to note that from 2008 on Brazil started to employ the IFRS standard, and the RTT was also edited. As mentioned before, since 2008 the distance between accounting and tax outcomes got higher. The adoption of criteria to measure assets and liabilities at fair value in lieu of the historical cost results in less smooth profit.

However, no research was found that had evaluated the impact of adopting the new accounting standards and the eventual change in the relation between accounting and tax profit in companies of the Brazilian financial system.

In this scenario, it is estimated that the adoption of new accounting standards and the RTT application in Brazil have not impacted the banks' tax-book difference – although the banks have approached the international standards (IAS 39) in 2001 and 2002 – because of the low adherence of the regulation body to the new accounting pronouncements.

3 METHODOLOGY

This paper aims to identify the elements deriving from choices – that is, the discretionary ones –, which explain the tax-book differences of banking financial institutions. Based in Martins (2002), this research can be characterized as empirical-analytical, since it seeks to analyze financial statements to identify the main factors impacting BTD in banks by collecting data, defining the sample, elaborating models and using statistical estimation – that is, a research with a quantitative approach.

3.2 Sample selection and composition

The process of composing the sample sent to the statistic tests is non-probabilistic and intentional. The set is constituted by all the individual financial statements of commercial banks, multiple banks and economic banks that operate in the Brazilian financial system. BNDES was not included, since its business characteristics are very distinct from the other participants.

The accounting data required for the tests was extracted from Banco Central do Brasil webpage, which discloses the statements of each institution. In addition, to complement the data required to the research, the information of explanatory notes of each institution's financial statement was also collected.

The initial data collection comprehended 2,402 observations related to data of 253 banks from 2003 to 2014. The year of 2003 was included in the collection because of the use of balance from previous period in some variables. In the process of creating variables and composing the final sample, the following items were eliminated: cases where the account did not register any balance in credit operations; cases from 2003; and cases with missing data. After this elimination, the sample results in 1,508 cases of 187 banks from 2004 to 2014.

3.3 Studies, Econometric Models, Variables Description and Development of Hypothesis

There are incentives to manage earnings and minimize the costs with taxes. The premise assumed in this paper is that the difference between accounting profit (outcomes before taxes) and tax profit may capture these incentives in line with the previous studies (Desai & Dharmapala, 2006; Frank, Lynch & Rego, 2009; Tang, 2005; Tang & Firth, 2011). These incentives correspond to the BTD discretionary part, or the abnormal BTD. Therefore, it is expected that, in line with these studies, earning management and tax aggressiveness elements are found to explain the abnormal BTD:

$$ABTD = \alpha + \beta_1 EM_{it} + \beta_2 AGT_{it} + \varepsilon_{it} \quad \text{Eq. 1}$$

Where EM corresponds to Earning Management and AGT stands for tax aggressiveness.

It is expected that Brazilian banks act to reduce the tax burden of taxes over profit. According to Tang (2005), the high tax burden encourages the practice of tax planning. In Brazil, the nominal rate of taxes over profit in financial institutions is approximately 25% for IRPJ and 15% for CSLL. Therefore, the banks might adopt planning practices to reduce the explicit taxes.

According to the studies presented on Section 2, the companies employ certain choices or accounting practices to manage the earnings or minimize the costs with taxes. This study analyzes the accounting practices of earning management with the utilization of specific accruals in financial institutions and in tax aggressiveness that impact the difference between the accounting and tax outcomes. It is supposed that the management practices affect the banks' BTD. According to the studies presented, the banks employ management as a way to smooth the outcomes. The expectation of robust profit causes

an increase of discretionary expenses with LLP or the reduction of results with securities. Conversely, the forecast of lower profit encourage the reduction of discretionary expenses with LLP or the increase of securities gains.

Therefore, the hypothesis stipulated in this paper was tested based on a two-stage econometric model. At first, the normal BTM was estimated based on Tang and Firth (2011) model, which was adapted to the Brazilian banking market particularities. The parcel of the equation 2 related to the earning management (EM) was estimated from the residues of specific regressions. The study will estimate the provision discretionary accruals for loan loss provision, outcomes with securities and application in derivatives.

The following section has the description of models for the estimation of the normal BTM and specific accruals.

3.3.1 First stage models

In the first stage, the BTM estimation by normal components is described as the following model:

$$BTM_{it} = \beta_0 + \beta_1 \Delta PCLD_{it} + \beta_2 \Delta RTVMD_{it} + \beta_3 JCP + \beta_4 PF_{it} + \beta_5 EQUI + TRIBdif + DRTT1 + DRTT2 + \varepsilon_{it}$$

Eq. 2

Where:

- BTM = Profit before expenses with IR/CSLL – Estimated real profit
- Estimated real profit: Current IR+CSLL divided by the nominal rate of 0.40 (In the period 2004-2008, the coefficient used was 34%, due to the CSLL rate equal to 9%).
- $\Delta PCLD_{it}$: Variation of the non-discretionary parcel of LLP (asset account);
- $\Delta RestTVMD$: Variation of outcome with securities and derivatives
- JCP : Interests over own capital accounted in the period.
- PF_{it} : Tax losses estimated in the current year.
- $EQUI$: Outcomes of investments in corporate participations.
- $TRIBdif$: Deferred taxes
- $DRTT1$: Dummy indicating the first RTT period (2008 and 2009)
- $DRTT2$: Dummy indicating the second RTT period (from 2010 on)

All the variables are scaled by the total asset of the banks in the beginning of the period. This procedure is common in samples where variables have a great dispersion in the order of magnitude (FÁVERO et al 2009).

The ε_{it} residue corresponds to the dependent variable to be used in the estimation of the second stage or normal BTM.

The model specified for the BTM calculation above predicts explanatory variables that can capture both the effects of permanent differences and the temporary differences between the accounting and tax outcomes.

To determine the real profit and the calculation basis of CSLL, the expenses with the loan loss provisions are not deductible in the current period. In the period where there is the reversal of the provision, they can be excluded from profit for the determination of the taxable basis. Thus, the variation in loan loss provision (asset reducer account) generates temporary differences. So its inclusion in the model is justified as one of the explanatory factors for the normal BTM. It is important to note that an increase in the balance of the LLP account will be reflected in a lower accounting profit, but in a higher taxable profit. That is, the LLP positive variations provoke a reduction of BTM. On the other hand, a negative variation in the LLP causes an increase in BTM. Considering the previous researches that have verified the practice of

earning management smoothing in banks, it is expected that institutions increase the balance of provision, with the perspective of profit. The increase in LLP generates a reduction in the accounting profit, but an increase in the tax profit due to the temporary additions. Therefore, it is expected an inverted sign for this variable.

The Tang and Firth (2011) model used the revenues variation from the previous year to the current one as an explanatory variable of the normal BTD. That same variation was also used by Martinez and Passamani (2014). Tang and Firth (2014) justify the intersection of this variable, because it controls the effects of the economic factors changes over the BTD. Since in the current case the BTD of bank financial institutions is estimated, more relevant than the revenue variation are the variations with outcomes resulting from applications in securities and derivatives. The outcomes of these assets can contain profit and losses from the evaluation at market value. In these cases, the tax legislation determines that the profit and losses resulting from the evaluation at market will only be computed in the creation of the financial instrument. Thus, the variable relative to the result verified with securities and derivatives was inserted in the model to capture the effect of this temporary difference. When evaluated art market value, the positive variation of the outcome with securities and derivatives increases the accounting profit, but does not interfere in the tax profit. That means the BTD tends to be increased. The negative variation of the result contributes for a lower profit, reflecting a lower BTD. Therefore, it is estimated a positive relation between the outcome with securities and the derivatives and BTD.

The tax loss is another factor to be considered in the normal difference between the accounting profit and the tax profit. On Tang and Firth (2011) model, the effect of losses is controlled by two variables: NOL and TLU. The first one controls the losses in the period and the second controls the use of balances of previous losses, according to the tax rules in China's jurisdiction. Martinez and Passamani (2014) have also used the NOL variable in their study, representing the estimative of the tax losses in the current year. Since the information disclosed to the tax authority is not available, it was not possible to estimate the TLU. In the model developed herein, PF represents an estimative of the tax loss and is calculated through the division of the sum of the current IR and CSLL, if it presents a positive result, by the nominal rate of 0.40. If the value is negative, there is no loss, but real profit. In this case, the value of zero is assumed. The occurrence of tax loss collaborates to the increase of difference between the accounting and the tax profit. Therefore, a positive sign is expected.

According to the tax legislation, the profit and loss in corporate participations evaluated by the method of equity equivalence have no tax effect. This way, the EQUI variable explains part of the normal difference between accounting and tax profit. The positive results with equity equivalence increase the accounting profit and reduce the tax profit (by permanent exclusions). The negative results, on the other hand, reduce the accounting profit and increase the tax profit (by permanent additions). There is no way to predict, a priori, the variable sign, since the sample studied may have not only a higher concentration of positive equivalence results, but also negative ones.

JCP are accounted as operational expenses and can be deducted from the IRPJ and CSLL calculation, as long as the tax legislation conditions are met. For the purpose of financing statement publishing, the amount of JCP is reclassified as accrued profit and loss. The JCP reduce the tax burden. Since this tax is evident in the financing statements in order to simulate the distribution of dividends, the outcome before taxes would not contemplate this effect. Therefore, the amount accounted as JCP payment corresponds to a relevant, permanent difference. In this case, a positive sign is expected to the variable.

Another component that explains the normal difference between tax-book profit corresponds to the remaining temporary differences that generate deferred assets and liabilities. A higher incidence of deferred tax revenue (which generates deferred tax assets) indicates there was an increase in the tax profit in the current period, and thus a reduction of

BTD. On the other hand, the increase in expenses with deferred tax shows a tax profit in the lower current period and thus a higher BTD. As such, if there is a higher incidence of expenses with deferred taxes, the relation between the BTD and the variable is positive. Thus, there is no prediction of the relation between the TRIBdif and the dependent variable BTD.

Lastly, as covered in the subsection 2.8, RTT was optional in 2008 and 2009 and started to be individually mandatory in companies since 2010. In the case of banks, it is estimated that the convergence process and the adoption of RTT did not substantially change the conformity between accounting and tax profit. Aiming to evaluate the change of Brazilian tax conformity since the adoption of IFRS and RTT, two dichotomous variables were included: RTT1, corresponding to the 2008-2009 period, and RTT2, corresponding to the 2010-2014 period. There is not an expected relation for the variables.

The estimation of the expense's discretionary parcel with credit provision of doubtful accounts is made by Zendersky (2005) model:

$$Prov_{it} = \alpha 0 + \alpha 1 OpV_{it-1} + \alpha 2 \Delta OpV_{it} + \alpha 3 \Delta OpC_{it} + \alpha 4 OpCBaix_{it} + \alpha 4 LLP_{it-1} + \varepsilon_{it} \quad \text{Eq. 3}$$

Where:

- $Prov_{it}$: total of expenses with credit provision of doubtful accounts;
- OpV_{it} : credit operations past due more than 60 days since the beginning of the period;
- ΔOpV_{it} : variation of credit operations past due more than 60 days in the period;
- ΔOpC_{it} : variation in the credit operations portfolio;
- $OpCBaix_{it}$: credit operations considered as losses;
- LLP_{it-1} : balance in the loan loss provision in the beginning of the period; and
- ε_{it} : residue (discretionary component).

The model to estimate the discretionary portion of the securities is adapted from the first stage of Dantas model, Medeiros, Galdi and Costa (2013), as explained in section 2.4. In that study, in addition to the variables related to the specific accruals, macroeconomic variables were used (interest, exchange rate and GDP growth) and representative of certain characteristics of the portfolio. In the following adjusted model, we didn't use the macroeconomic variables and the characteristics of the portfolios. The ε_i residue will be used in the model to estimate abnormal BTD as discretionary portion of results with securities.

$$ResTVMDv_{it} = \alpha 0 + \alpha 1 TVM_{it-1} + \alpha 2 \Delta TVM_{it} + \varepsilon_{it} \quad \text{Eq. 4}$$

Where:

- $ResTVMDv_{it}$: outcomes of securities in the period;
- TVM_{it-1} : balance of securities in the beginning of the period;
- ΔTVM_{it} : variation of securities in the period;
- ε_{it} : residue (discretionary component).

The latest model for the calculation of the second stage accruals corresponds to the model Dantas, Galdi, Capelletto and Medeiros (2013) for derivatives. The model used to determine the discretionary component of derivative transactions is the difference between residue of regressions that estimates assets and liabilities net positions.

$$\varepsilon_{it} = u_{it} - v_{it} \quad \text{Eq. 5}$$

Where:

- ε_{it} : difference between residues;

- u_{it} : residue of the regression that estimates the asset position in derivatives ($u_{it} = Dat_{i,t} - Y_0 + Y_1 Dat_{i,t-1}$)
- v_{it} : residue of the regression that estimates the liability position in derivatives ($v_{it} = Dps_{i,t} - Y_0 + Y_1 Dps_{i,t-1}$)
- *Dat* – asset position of derivatives; *Dps* – liability position of derivatives

3.3.1 Hypothesis of the research and model for the second stage (ABTD)

There are empirical evidences that banks use the discretionary part of the expenses as loan loss provision to manage earnings (Goulart, 2008; Kanagaretnam, Lobo & Mathieu, 2003; Zendersky, 2005). The discretion in the LLP stipulation influences managers to account more expenses when the outcomes before taxes are high or to reduce the taxes when outcomes are lower such as to smooth the performance if the financial institution. The management of this specific accrual impacts the accounting result parcel of BTD. However, the increase of expenses with LLP has the effect to raise the current tax liability, because of the addition to the profit of the provision's parcel. This effect is due to the differential treatment between accounting and tax regime for expenses with the provision, since these expenses are not deductible in their constitutions for tax purposes. The tax recognition only exists after the effective loss accomplishment or with the recovery of the accounting expenses. Therefore, in the perspective of higher outcomes, the increase in discretionary expenses with PCDL reduces (makes smooth) the accounting results, but increases the tax outcome, which causes a BTD reduction. In this case, there is a lower scale addition in the tax profit and, thus, a higher BTD. Aiming to avoid the increase of tax cost, it is supposed that banks would choose practices to minimize this effect. This hypothesis is in line with Frank, Lynch and Rego (2009), who have found a positive relation between earning management and tax aggressiveness. However, this effect would not be captured by the DLLP variable, but by other variables (estimated in the model or not). Under this perspective, as exposed, the expectation is that the earning management via LLP has an inverse relation with the BTD variation.

Thus, the following hypothesis is determined:

H₁: There is a negative relation between earning management via LLP and the banks abnormal BTD.

Zendersky (2005); Goulart (2008); and Dantas, Medeiros, Galdi and Costa (2013) studied the discretionary actions of managers of financial institutions in the accounting and valuation of securities. Studies have shown that banks would use the opportunity to raise or lower gains on investments in these financial assets, given the measurement criteria at fair value according to the classification of securities in order to manage the results. It is estimated that these practices also influence the magnitude of the difference between accounting income and taxable income. The management results with the use of securities analyzed by Dantas, Medeiros, Galdi and Costa (2013) also highlighted the smoothing results. The possibility of management on the results of securities may be given in measuring fair value and the asset classification according to the criteria of Central Bank. That is, the higher profit perspective, discretionary choices provide that the gains from securities are reduced either by management to measure, reducing the market value of trading securities or the classification of available for sale (in which there is no impact on result). If there are smaller earnings expectations, the movement is reversed: the market adjustment can be increased for securities classified as trading, or securities that were classified as available for sale can be sold in order to realize profits stocked in equity liquid. In the case of measurement at fair value, the shares in excess of the compensation under the curve have no impact on taxation. Taxation is the realization) of the securities. There is, however, the control of temporary differences due to the difference between the schemes (accrual and cash). Thus, it is the management in order to lower net income, the decrease in results from securities, there is a temporary increase in tax income, and consequently a decrease in BTD. In the case of a management for more, net income and increases taxable income is adjusted, contributing to an increase in BTD. Thus, it is estimated that earnings management securities has a positive relationship with abnormal BTD.

H₂: There is a positive relationship between earnings management via securities and abnormal BTB banks

The use of discretion in accounting for derivatives can influence both the results of management and in tax management. Goulart (2008) found that banks use derivative instruments to smooth the results. Here the reasoning is the same as that applied to the securities. Regarding the use of derivatives as a practice of tax aggressiveness, Donohoe (2015) obtained evidence that derivative transactions reduce the tax burden. Thus, it is expected that the proxy for discretionary operations results with derivatives influence the magnitude of BTB. However, it can not set a priori signal to the relationship between discretionary practices with derivatives and abnormal BTB.

H₃: There is a relationship between earnings management via derivatives and abnormal BTB banks

Cabello (2012) says that the processes of corporate reorganization, considering the tax repercussions of using goodwill for future profitability, are an instrument to reduce the tax cost. In his study, the companies that show this element presented a lower ETR. Thus, it is expected that the proxy resulting from operations related to corporate reorganizations influences BTB.

H₄: There is a positive relation between tax aggressiveness via corporate organization and abnormal BTB.

Mills, Newberry and Trautman (2002), observing a temporal series, noted the multinational companies present a higher BTB. Rego (2003); and Frank, Lynch and Rego (2009) observed that the existence of cross-border operations takes to a lower tax burden (higher BTB). Thus, it is expected a positive relation between the proxy for cross-border operations and the BTB.

H₅: There is a positive relation between tax aggressiveness via operations abroad and the abnormal BTB.

Two models were established to estimate the abnormal BTB and will be used to validate the hypothesis, one for each indicator of tax aggressiveness:

$$ABTD = \alpha_0 + \alpha_1 DPCLDit + \alpha_2 DRTVM + \alpha_3 DRDER + \alpha_4 PREF + \alpha_5 RSOC + \varepsilon_{it} \quad \text{Eq. 6a}$$

$$ABTD = \alpha_0 + \alpha_1 DPCLDit + \alpha_2 DRTVM + \alpha_3 DRDER + \alpha_4 PREF + \alpha_5 OPEXT + \varepsilon_{it} \quad \text{Eq. 6b}$$

RSOC supposes 1 if there is corporate reorganization in the event period itself and also in the following four periods, and 0 in the opposite case. From the bank information, the following events of incorporation, fusion and splitting were considered as corporate reorganization. The variable OPEXT supposes 1 if there are cross-border operations and 0 on the opposite case. A positive sign is expected for both variables.

The option to make the tests for the abnormal BTB in two models, according to each of the dichotomous variables inserted, is justified by the distribution of cases in the sample. The following chart shows that cases where there are both RSOC and OPEXT represent 41.6% of the occurrences where there is only RSOC, and 9.6% of the cases with OPEXT only.

Chart 1 – Dummy variables occurrences

Variables	Occurrences		
RSOC	1	1	1 / 0
OPEXT	1	1 / 0	1
Total	34	82	353

The PREF variable was inserted as a control and corresponds to level I of reference equity, a proxy for the regulatory capital. Junqueira and Nakao (2013) got evidences that financial institutions use deferred taxes to meet the regulatory capital. The total difference between the accounting and tax outcome encompasses permanent and temporary differences. It is estimated that the regulatory capital proxy can also explain the abnormal differences in BTB. Both temporary additions and tax losses can lead to the constitution of deferred assets.

4 RESULTS OF TESTS AND ANALYSIS

4.2 Results and Analysis of the BTD

The Table 1 below shows the result of multiple linear regression, in set of data, of the BTD from 2004 to 2014, according to what is specified on Equation 2.

Table 1 - Regression - Eq 2 - normal BTD (n= 1508) Robust mistakes HCO

	Sign Expected	Coeff.	Std. Error	p-value		VIF
const	?	- 0.001315	0.002002	0.51129		
Δ LLP	-	- 0.250453	0.157355	0.11168		1.063
Δ RTVMD	+	0.075174	0.020314	0.00022	***	1.012
JCP	+	1.585960	0.190321	<0.00001	***	1.023
PF	+	0.398764	0.106496	0.00019	***	1.035
EQUI	?	0.970512	0.066065	<0.00001	***	1.012
TRIBDif	?	- 1.091990	0.248807	0.00001	***	1.088
RTT1	?	- 0.003992	0.002750	0.14677		1.243
RTT2	?	- 0.006430	0.002514	0.01064	**	1.270
R2		0.365795				
R2 adjusted		0.36241				
P-value (F)		< 0.0001				

Source: Made by the author.

Note: Assumptions of the regression analysis: (a) the premise of violated normality, but relaxed because the size of the complimentary sample contemplates 1,508 observations and due to the theorem of central limit (BROOKS, 2002); (b) the standard correction of robust errors of White HCO was used for the heteroscedasticity found (WOOLDRIDGE, 2006) (c) no multicollinearity was identified, because all the VIF (factors of variance inflation) were under 10; and (e) the serial self-correlation was not tested, because data is *pooled* (FÁVERO *et al.*, 2009).

***, **, and * represent the statistic significance at 1%; 5%; and 10%, respectively.

The regression is significant as a whole, since the p-value (F) <0.001. The independent variables can explain 36.24% of BTD variation, according to the R² adjusted. The variables Δ LLP and RTT1 were the only ones with no statistical relevance. The variables Δ RTVMD, JCP, PF and EQUI showed significance, all of them with p-value under 1% and positive sign, as predicted. TRIBDif is significant, with p-value <0.01 and negative sign. RTT1 did not show significance. RTT2 is significant with negative sign.

The result of the regression that estimated the normal BTD variation, as in the model described on Equation 21, shows the dependent variable can be explained by the variation of the outcomes with securities, by the accounting of interests without own capital, by the results in corporate participations, and by deferred taxes. The expectation of a relation between the BTD and the LLP variation was not confirmed.

As for the variation of results with securities, the positive relation with BTD variation was confirmed. There is a normal misalignment between the accounting and tax outcomes resulting from different criteria of profit – or losses – appropriation relative to the operation with financial instruments. The accounting of financial instruments must follow the provisions of Memo 3.068/2001 (BRASIL, 2001). On the securities evaluated for negotiation, the variations of market price impact results. However, for the accounting of profit – or losses – in the tax results, the accomplishment is needed, that is, the impact only happens at the moment of the liquidation, due to the evaluation of the market value in the final outcome. Thus, a variation in the accounting outcome for more causes a temporary exclusion in the tax outcome, which increases the BTD. On the other hand, a variation in the accounting outcome for less has the opposite effect, causing a temporary addition and creating a lower BTD.

The accounting of interests over own capital represents a definitive exclusion in the tax result. The option of payment of interests over own capital was studied by Souza Filho and Szuster (2004). The authors observed that the

financial institutions analyzed, with high profitability rates in comparison to other sectors, have got an expressive reduction in the tax burden when benefited from the deductibility of interests over own capital. The result obtained for the JCP variable in the regression confirms the potential of tax cost reduction.

According to the model developed by Tang and Firth (2001), the loss is related to the non-discretionary BTD. The regression showed the tax loss has a direct relation (positive) with BTD.

The variable EQUI is also significant and has a positive sign, showing banks of the sample present more positive results with the outcomes of equity equivalence than negative. Frank, Lynch and Rego (2009), when estimating the non-discretionary components of permanent differences, included in their model a variable to control the outcomes coming from corporate participations. Likewise, in this study, the outcome obtained with the evaluation of investments through equity equivalence (EQUI) was incorporated in the model to estimate the non-discretionary BTD, since such components do not impact the tax outcome. The result of the regression demonstrates a relation between the BTD and the outcomes coming from corporate participations. In the current case, the positive sign shows the sample has a higher incidence of positive results with equivalence.

Aligned with Martinez and Passamani (2014) research, the variable TRIBDif was incorporated in the model to capture the relation between the deferred taxed and the BTD. For sure, the temporary additions and exclusions are causes of normal misalignment between the accounting and tax outcomes. As the Table 1 shows, the variable TRIBDif showed significance, at 1%, and negative sign. This result indicates a higher incidence of deferred taxes revenues in the sample.

The results for the dummy variables RTT1 and RTT2 show that the breach on the accounting-tax conformity resulting from the adoption of IFRS and the implementation of RTT in Brazil has not affected the banks outcomes. The negative sign for variable RTT2 demonstrates that BTD was higher during the period of convergence to IFRS and RTT than after 2010. This result is aligned with the non-parametric test of current ERT average equality, according to the previous section.

Based on the results shown in the regression that sought to estimate the relation of the Brazilian banks BTD, where most part of the expectations were confirmed (except to the variation in LLP), it is possible to consider the model apt to estimate the discretionary BTD (ABTD) from residues.

We also estimated the waste of accruals in order to find the discretionary portions of LLP, securities and derivatives. All regressions were statistically significant and able to calculate the variables corresponding to portions of discretionary accruals.

4.3 Results and Analysis of Abnormal BTD

The Table 2 below presents the result of the multiple linear regression of the abnormal BTD in grouped data, as specified in the Equation 6.

Table 2 - Regression Eq 6 - ABTD (n=1508) Robust Errors HCO

Model Eq 6a - RSOC					Model Eq 6b - OPEXT						
	Sign Expected	Coeff.	Std. Error	p-value	VIF	Coeff.	Std. Error	p-value	VIF		
const		- 0,010947	0,0024 97	0,0000 1	***	- 0,01268 8	0,00266 1	<0,00001	***		
DPCLD	-	- 0,121820	0,0583 99	0,0371 5	**	1,005	0,111662 9	0,05397	*	1,014	
DTVMD	+	0,0073 84	0,0354 24	0,8349 0		1,001	0,000711 6	0,98379		1,011	
DDERIV	+ / -	0,0347 68	0,0414 91	0,4021 9		1,003	0,0350 35	0,04087 2	0,39147	1,003	
PREF	+	0,0380 75	0,0069 97	<0,0000 1	***	1,003	0,0391 49	0,00716 8	<0,00001	***	1,017

RSOC	+	0,0072 45	0,0035 76	0,0429 4	**	1,000	NA	NA	NA	N A	NA
OPEXT	+	NA	NA	NA	N A	NA	0,0078 49	0,00239 4	0,00107	***	1,031
R2			0,132874						0,137403		
R2 ajustado			0,129988						0,134532		
P-valor (F)			< 0,0001						< 0,0001		

Source: Made by the author.

Note: Assumptions of the regression analysis: (a) the premise of violated normality, but relaxed because the size of the complimentary sample contemplates 1,508 observations and due to the theorem of central limit (BROOKS, 2002); (b) the standard correction of robust errors of White HCO was used for the heterocedasticity found (WOOLDRIDGE, 2006) (c) no multicollinearity was identified, because all the VIF (factors of variance inflation) were under 10; and (e) the serial self-correlation was not tested, because data is *pooled* (FÁVERO *et al.*, 2009).

***, **, and * represent the statistic significance at 1%; 5%; and 10%, respectively.

The first model relative to the regression of 6a (RSOC) is significant as a whole, since the p-value (F) < 0.0001. The model explains 12.99% of variation in the ABTD according to the R₂ adjusted. The DPCLD showed a significant statistic at 5% (p-value = 0.03715) and a negative sign, as predicted. The variable PREF presented significance, with p-value < 0.001 and positive sign. Lastly, the variable RSOC also showed significance, but at 5% (p-value = 0.04294) and with positive sign.

We could not confirm the relation between the ABTD and earnings management by securities or derivatives. Thus, we rejected the hypothesis H₂ e H₃.

The result shows a relation between the abnormal BTD and the earning management and tax aggressiveness practices, according to the results for the variables DPCLD and RSOC, respectively.

The discretionary actions over the loan loss provision have an inverse relation with the BTD, confirming the hypothesis H1. The earning management made by agents to reduce (smooth) the profits via expenses with provision contributes to a decrease in difference between the accounting and tax outcomes. If the accounting profit is reduced in larger scale because of the excess of provision, before the non-discretionary parameters, there is also a higher temporary addition to account the tax profit. This effect may encourage the actions of tax aggressiveness so that there is no undesired effect of tax burden increase.

The tax aggressiveness hypothesis predicted in the model was also confirmed, assuring H₄. According to the econometric result, there is a positive relation between the operations of corporate reorganization and the BTD. This result indicates the banks do not neglect the opportunities to reduce the tax burden from the operations in corporate reorganization. This result is aligned with Cabello (2012) research, which found a relation between the processes of corporate reorganization and tax aggressiveness actions. It is important to observe that the corporate reorganization event itself does not generate a reduction in tax burden. However, there are opportunities coming from the leverage of the costs of goodwill amortization, according to the data predicted in the tax legislation that allows the tax deduction in processes of corporate reorganization (incorporation, fusion and splitting) when its foundation is the expectation of future profitability (BRASIL, 1997).

Furthermore, the regression shows that the variation of abnormal BTD is influenced by the proxy of the reference equity, represented by the PREF variable. According to the study of Junqueira and Nakao (2013), there would be incentives by the agents' parts to encourage he generation of tax differences and reach the required levels of regulatory capital. In the current case, there is a direct relation between the regulatory capital and the abnormal BTD.

The model 6b (OPEXT) is significant as a whole, p-value (F) <0.0001. The independent variables explain approximately 13.45% of variation in the abnormal BTB, according to R² adjusted.

Just as the previous model, the variables relating to discretionary accruals arising from transactions with securities and derivatives were not able to explain the variation of ABTD.

The positive relation between the abnormal BTB and the variable PDEF is also confirmed, proxy related to the reference equity. Such as the precedent model, the variable showed a 1% significance. The conclusions are the same ones noted for the previous model.

The variable DCLD presented significance at 10% (p-value = 0.05397) and negative sign, according to what was specified. Thereby, the hypothesis H1 is also confirmed for this model, showing a negative relation between the BTB and the earning management resulting from the choices of parameters for the loan loss provision.

The result of the regression for model 4b still shown the variable OPEXT has statistical significance at 1% (p-value = 0.00073) and positive sign, according to the prediction. This result confirms hypothesis H₅. The abnormal BTB is explained by discretionary actions resulting from tax aggressiveness practices related to keeping investments abroad. The confirmation of H₅ is aligned with previous researches, which have noted higher tax aggressiveness in companies with cross-board investments (Frank, Lynch & Rego, 2009; Mills, Newberry & Trautman, 2002; Rego, 2003). The evidence found here and supported by previous studies also finds support in the action developed by the Organization for Economic Cooperation and Development (OECD) together with G-20 countries: the action plan about the base erosion and profit shifting (OECD, 2013). In the document, OECD acknowledges that the global economy development created opportunities for multinationals to dramatically reduce their tax burden. Then, they suggest actions for countries to implement instruments that enable the “solution of base erosion”, among other things (OECD, 2013, p.13).

The results achieved in the two regressions presented on Table 4 confirm the banking financial institutions of the sample employ earning management practices through the LLP management, as well as aggressiveness tax measures, resulting from the operations related to corporate reorganization processes and of investments of cross-border corporate participations.

CONCLUSIONS

The tax-book difference for taxation has components related to the specificities of the rules and to the choice of agents. The difference originating from choices may disclose either the earning management practice or the tax aggressiveness, or both. The current study had the purpose of analyzing the difference between accounting and tax outcomes of Brazilian banks in the 2004-2014 period and identifying the main factors to explain the tax-book difference of these economic agents, especially the ones related to the discretionary actions. A two-stage model was elaborated to estimate the BTB portion influenced by discretionary actions of earning management and tax aggressiveness in banking financial institutions. The model applied was inspired in studies of Tang (2005) and Tang and Firth (2011), who, in their turn, were based on Desai and Dharmapala (2006) and Frank, Lynch and Rego (2011) researches. In Brazil, the study of Martinez and Passamani (2014) also used the model created by Tang (2005) to estimate the BTB. However, the research object of that research was composed by non-financial companies, and it was based in empirical studies of earning management in the estimation of the discretionary part.

In the current paper, the choice of variables for the first stage elected the components resulting from the usual differences between accounting and tax outcomes. That is, elements coming from the different criteria of revenue appropriation, costs and expenses, one for the accounting information and the other to meet the purposes of the tax legislation. Both variables resulting in temporary and permanent differences were chosen. The empirical test was almost

fully confirmed with relation to the normal difference between accounting and tax profits and the variables. It was observed that BTM may be explained by the variation of results with securities, tax losses, accounting of interests on own capital, results from investments in corporate participations and deferred taxes. The relation between BTM and the asset account related to the loan loss provision was the only one with no significance shown.

According to the rating adopted for financial instruments, the results with securities bring values that will only be accomplished in tax terms in the future. If the financial instruments increase due to the market valuation, such amounts will be excluded for the tax profit computation. There is a positive relation with BTM, which was confirmed in the econometric model.

The interest on own capital and tax losses have a direct relation with the difference between accounting profit and tax outcome, which was also confirmed in the first stage regression. The outcomes resulting from corporate participations in investments subject to evaluation through the equity equivalence method do not generate tax effects. Positive results are excluded and the negative ones are added to the profit for the calculation of the tax profit. The model disclosed a direct relation with BTM, which means there is a higher parcel of positive results with equivalence in the sample subject to tests. The deferred taxes of the sample also showed a negative relation with BTM.

During the first estimation model, the relation between BTM and the convergence to international accounting rules was also tested, as well as the transitional tax regime (RTT). As observed, the Brazilian banks did not present a BTM higher than before the convergence process. On the contrary, the result of the statistic test showed that BTM is even lower in the post-2010 period than it was from 2004 to 2007. As for the banking financial institutions, therefore, the breach of tax accounting conformity did not produce any impact. This data confirms the expectation presented in the text, mainly because of two reasons. First, as for the evaluation of assets at fair value, since 2001 the regulatory body has already implemented rules similar to the international ones for the measurement and rating of financial instruments (IAS 39); and second, because of the low adhesion of the regulator to adopt the accounting pronouncements emitted by CPC for the banks' individual financial statements. The result also confirms the less robust previous test of equality of averages from the ETR variable.

The estimation of the abnormal BTM, that is, the difference between accounting and tax profit not explained by the rules difference seemed to be able to capture the effects of earning management and tax aggressiveness. Before the considerations about the hypothesis formulated, it is important to register the results of tests with the reference equity or regulatory capital.

The relation between BTM and regulatory capital was confirmed. The banks should meet the minimum capital requirements, as per the prudential rules. Both the temporary additions and the losses occurrences imply the constitution of deferred assets that increase the institutions reference equity. According to the results, there is a direct relation between the proxy adopted for the reference equity and the BTM, which would influence the losses in the formation of deferred assets. The tax losses increase the BTM, but contribute to the constitution of deferred assets, which in their turn increase the regulatory capital.

The earning management through the manipulation of provision for doubtful liquidation credits is one of the factors explaining the abnormal BTM variation. According to Zendersky (2005) and Goulart (2008) studies, the banking financial institutions employ LLP to smooth profit. These researches says the accrual is used to reduce (smooth) the earnings under the perspective of higher profits. This action reduces the accounting profit and increases the current tax profit, due to the temporary additions. Therefore, there is an inverse relation with BTM, which was confirm with the empirical test made. The tests made in both models specified showed that the discretionary BTM can be explained by the earning management. This result is important for several actors interested on the banks financial statements: the market, regulators and tax authority. The BTM follow-up in bank institutions can be a good indicator of earning management and may help on economic-financing and prudential exams. It is also important to note that the inverse relation between

management via LLP and abnormal BTM can encourage the practice of tax aggressiveness actions such as to neutralize the effect of reducing BTM.

The study also confirmed that tax aggressiveness actions explain the abnormal BTM variation, in compliance with the two hypothesis raised for these types of choices.

The events of corporate reorganization (incorporation, fusion and splitting) in the period evaluated generate opportunities to reduce the tax burden due to the possibility of goodwill amortization, so far kept in the equity of the absorbed entity to the rate of up to one sixtieth for each month in the accounting period. To deserve the benefit, the goodwill must be the one registered on the acquisition of investments in corporate participations which has as a foundation the profit amount, the investment, based on the provision of results in the following years. The result of the model submitted to econometric tests shows a positive relation between the abnormal BTM and the corporate reorganization events, corroborating the evidences found by Cabello (2012).

Lastly, the hypothesis of a relation between keeping investments in cross-border participations and tax aggressiveness was also confirm. The abnormal BTM presented a positive relation with the colligate companies or the ones controlled abroad. The result is aligned with previous studies that show the multinational companies present a lower tax burden (Frank, Lynch & Rego, 2009; Mills, Newberry & Trautman, 2002; Rego, 2003). It can be explained by the opportunities the cross-border investments can provide to investors in terms of costs with taxes over profit, and not by the fact itself of keeping the investment abroad. In that sense, the following can be highlighted: choices related to shifting price, choosing the investment address in jurisdictions with low income taxation or where there are treaties to avoid the bi-taxation. In other words, on the choices related to international taxation, there are chances of reducing the costs with taxes over profit.

For future researches, the suggestions are: a) to evaluate the relation of BTM with future earnings; b) to evaluate the BTM of banks that entered the liquidation regime; c) to compare tax conformity of banking multinational in several jurisdictions.

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