



Free Cash Flow and Earnings Management in Brazil: The Negative Side of Financial Slack

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Keywords: free cash flow, discretionary accruals, earnings management.

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FREE CASH FLOW AND EARNINGS MANAGEMENT IN BRAZIL THE NEGATIVE SIDE OF FINANCIAL SLACK

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Free Cash Flow and Earnings Management in Brazil: The Negative Side of Financial Slack

Fabricio Terzi Cardoso ^α, Antonio Lopo Martinez ^σ & Aridelmo J. C. Teixeira ^ρ

Abstract- The article investigates whether Brazilian firms with excess free cash flow (FCF) and low growth perspectives engage in earnings management by means of income-increasing accruals. According to the agency cost hypothesis (Jensen, 1986), when there is excess FCF, accompanied by limited growth perspectives, managers have incentives to camouflage the impact of investments in projects with negative net present value (NPV) by presenting inflated profits. The study includes firms listed on the BMF&Bovespa in the period from 2008 to 2012. Discretionary accruals (DA) were estimated by the modified Jones model and then the relationship between FCF and DA was ascertained by multiple regression. The results indicate that firms with low growth perspectives and excess FCF are more likely to manage earnings to increase profits. Shareholding concentration and adoption of IFRS moderate this relationship (FCF x DA), i.e., in practical terms they restrict the propensity to engage in this type of earnings management. This study is relevant by identifying a tendency to manage earnings. Regulators and investors should pay particular attention to the accounting results disclosed in the presence of excess free cash flow and low growth perspectives.

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1. INTRODUCTION

The objective of this study is to verify whether a relationship exists between free cash flow (FCF) and the propensity to manage earnings by manipulating discretionary accruals (DA) by firms with low growth perspectives, a propensity that arises due to agency conflicts. According to Jensen (1986), the interests and incentives of managers and stockholders are in conflict regarding the optimal size of the firm and payment of dividends, especially in firms with excess free cash flow and low growth perspectives, i.e., firms with more resources than investment opportunities. In this case, managers can either increase dividends or invest in projects with low return, wasting these resources.

For Chung, Firth & Kim (2005), in the absence of efficient control by shareholders, managers can choose to invest in projects that present negative net present value (NPV) or that do not satisfy the profit expectation of investors. The preference for using the firm's own resources is to avoid the attention of creditors interested in guaranteeing the return of the amounts

invested. Identifying the agency cost associated with free cash flow (investments made in projects with negative NPV) is difficult. Managers normally do not disclose the free cash flow projections of investments and the premises behind them. To avoid this disclosure, managers invoke the need for business secrecy.

According to Jensen (1986), the payment of dividends reduces the power of managers by diminishing the amount of resources available to them. To prevent resources from leaving the firm, managers look to invest these funds in projects to maintain responsibility over them, and as a consequence, maintain their power in the company. However, to retain these resources, it is necessary to promise higher future returns to the shareholders, since they will only be willing to forgo dividends now when there is an outlook for increased gains in the future. This promise of higher returns is not always easy to keep, so earnings management serves as an instrument to mollify the shareholders and preserve the positions of the managers involved. These circumstances cause companies to grow beyond their optimal size.

However, according to Chung, Firth & Kim (2005), bad investments are eventually revealed by the firm's future results. Investments that do not maximize shareholder wealth can reduce the stock price and trigger efforts by shareholders to dislodge managers. Therefore, to camouflage the impact of investments with negative NPV, managers use accounting procedures to increase earnings. This "increase" soothes investors and boosts the firm's stock price in the short run.

Therefore, verifying whether the earnings information disclosed corresponds to the firm's real performance is fundamental. The importance of earnings as a parameter for judging the performance of firms and managers has been stated by various authors. According to Martinez (2008, p. 2), "one of the most important products of accounting for various users of financial information is earnings." For Dechow, Ge & Schrand (2010), high-quality earnings supplies more relevant information on the financial performance of firms, to serve as a base for investment decisions. Many authors have tried to identify factors that contribute to the quality of earnings.

The results of studies such as Dechow & Dichev (2002) and Dechow, Richardson & Tuna (2003) indicate that earnings quality is influenced by accruals. In this

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respect, Houge & Loughran (2000) state that accruals and cash flows make an incremental contribution to stock returns and the results obtained is the sum of these two contributions. Therefore, understanding the relationship between accruals and cash flow will enable better determining the performance of firms and their managers, especially from the standpoint of the return on investment realized by the shareholders.

This return can fall short of what is desired and one of the factors that can contribute to this is the conflict of interest between firms' managers and owners. For Bhundia (2012) and Jensen (1986), this conflict encourages managers to manipulate the results to maximize their own wealth, or to remain in their positions. For authors such as Schipper (1989) and Dechow, Sloan & Sweeney (1995), this manipulation can be achieved by means of accruals.

Various models have been developed to study this manipulation of earnings, such as those of Jones (1991) and Dechow, Sloan & Sweeney, (1995), among others mentioned in the work of Dechow Ge & Schrand (2010). According to Martinez (2008, p. 2), "these models assume that the accounting choices resulting from attempts to manage earnings can be measured by examining the discretionary accruals." These models indicate factors that affect earnings management. According to Bhundia (2012), Chung, Firth & Kim (2005) and Lehn & Poulsen (1989), one of these factors is the amount of FCF available to the company.

The studies of Bhundia (2012) and Chung, Firth & Kim (2005) show the existence of a positive relationship between the amount of FCF and the existence of earnings management in the international context. This relationship results from the use of this management to meet investors' profit expectations, by masking the fact that the excess FCF was not distributed but rather was invested in projects with low profit outlook (Jensen, 1986).

Brazil has different characteristics than the markets analyzed by Bhundia (2012) and Chung, Firth & Kim (2005). In Brazil, the debt structure of firms is more strongly influenced by financial institutions and the shareholding concentration is relatively greater than in countries with more developed markets. Therefore, these differences motivate the following research question: What is the relationship between the excess free cash flow (or financial slack) and earnings management of Brazilian firms with low growth perspectives?

The main contribution of this study is to expand knowledge about earnings management and its relationship with free cash flow, to allow investors to make more informed decisions. Additionally, there may be other factors that can interfere in this relationship that have not been noted in previous studies. Finally, the

findings here can serve as the basis for new studies on the theme in Brazil.

II. THEORETICAL FRAMEWORK

a) *Agency Theory*

It is natural to expect human beings to try to maximize their wealth. According to Bhundia (2012), most people are not able to manage their assets in the most effective way, making it wise to contract others with more expertise to perform this service. For this same author, according to agency theory the first group is composed of owners (proprietors of the means of production) and the second is formed by agents or managers. In reality, the agents are the representatives of the owners of companies (the principals), engaged to maximize the wealth of the owners.

For Jensen & Meckling (1976), if both sides of this relationship seek to maximize their own wealth, there is good reason to believe the agent will not always act in the best interests of the principal. These authors define the agency relationship as a contract by which one or more owners engage a manager to perform a service that involves delegation of authority to make decisions. However, managers do not have *carte blanche*. The owners will naturally try to limit the divergences of interests by establishing appropriate incentives for the managers, and will also establish mechanisms to oversee the managers' behavior and punish misbehavior. This oversight by the owners of course comes at a cost.

Jensen & Meckling (1976) state that the magnitude of the agency costs depends on the personality of the managers, the leeway they have to exercise their own preferences in opposition to maximizing the owners' wealth, the monitoring costs and the bonding activities between the parties of the firm. These agency costs are more evident in the remuneration of the shareholders.

According to Jensen (1986), paying dividends creates one of the main conflicts, since it reduces the amount of resources under the control of the managers, diminishing their power. This reduction of resources makes it more likely that managers will incur monitoring of the capital market due to the firm's need to obtain new capital. Financing projects internally avoids this monitoring and the possibility the funds will be available or unavailable only at high explicit prices. Another factor raised by Jensen (1986) is that managers have incentives to cause the firm to grow beyond its ideal size. Such growth increases the power of managers, since it raises the resources under their control, with a consequent increase in their remuneration, due to the positive correlation between growth of sales and executive compensation. As can be seen, agency conflicts are inherent in business management,

particularly involving the availability and management of cash flows. These conflicts are costly to the company and create the need for control mechanisms so that the interests of the shareholders will be respected.

b) *Free Cash Flow*

Jensen (1986) introduced the theory of free cash flow and defined it as the cash flow from operating activities in excess of that needed for investment in projects with positive net present value (NPV) when discounted at the relevant cost of capital. Other authors have also defined free cash flow. According to Lehn & Poulsen (1989), FCF is the operational profit before depreciation but after taxes and dividend payments. For Dechow & Ge (2006), in turn, FCF is the cash flow from operational activities plus the cash flow from financial investments. In other words, FCF is the resources available for managers to invest, but that otherwise could be distributed to the shareholders.

For Bhundia (2012) and Jensen (1986), one of the greatest agency problems is the allocation of the free cash flow. According to Jensen (1986), the conflicts of interest between shareholders and managers over the dividend payout policy is especially severe when the organization generates large free cash flows. This is reflected in the problem of how to motivate managers to increase dividends instead of making investments with returns below the cost of capital or wasting cash through inefficiencies. Bhundia (2012) states that the operating cash flow disclosed indicates the firm's capacity to generate resources. He further comments that the operational cash flow should not be used only for acquisition of new assets to allow the company to maintain its current level of activity; part of it should also be distributed as dividends. This situation of opposing uses generates an agency conflict between shareholders and managers.

According to Jensen (1986), conflicts of interest are greater when there is excess FCF available. Managers can promise that future cash flows will be used to increase dividends. But such promises are weak because there is nothing to prevent reducing dividends in the future. On the other hand, such cuts in dividends are punished by the capital market with large stock price reductions, one of the agency costs of free cash flow. This situation is particularly serious in firms with low dividend perspectives (low growth outlook), since the capacity to generate future dividends is less. In this respect, Chung, Firth & Kim (2005) state that the combination of FCF with restricted investment opportunities has been indicated as one of the most frequent agency problems, since managers can incur expenses that reduce the wealth of the shareholders. Jensen (1986) defined this spending of FCF on projects with negative NPV as the agency costs of FCF. Also according to him, firms with poor growth perspectives are more likely to invest their FCF in unprofitable

projects. In the absence of effective monitoring or disciplinary measures by shareholders, some managers can decide to invest in projects with negative NPV.

Chung, Firth & Kim (2005) suggest that to camouflage the effects of investment that do not maximize profits, managers use the discretion under accounting rules to increase the results reported. This opportunistic behavior will be limited by effective monitoring by the stockholders. To test the extent of this management discretion, the authors evaluated whether firms with low growth perspectives and high FCF have incentives to "improve" earnings by manipulating discretionary accruals. There have been many similar studies using discretionary accruals as a proxy for earnings management.

According to Dechow, Ge & Schrand (2010), nondiscretionary accruals result from adjustments necessary to reflect the firm's performance, while abnormal (discretionary) accruals are those that capture distortions induced by the accounting system or that result from earnings management. There is a general view that if the normal component of accruals is properly modeled, then the abnormal component of accruals has worse quality, so it impairs the overall quality of the information provided by earnings. Corroborating this view, Subramanyam (1996) affirms that discretionary accruals do not occur because of inefficiency of the market, but instead due to the fact that managers use accruals to smooth revenues and improve the persistence and prediction of earnings. He also suggests that to study earnings it is necessary to examine its components, namely accruals and cash flows.

Chung, Firth & Kim (2005) found that firms with excess FCF tend to use discretionary accruals to increase the announced earnings. This fact is consistent with the hypothesis that managers use DAs to camouflage the impact of investment projects with negative NPV. Bhundia (2012) also found this result. However, Opler & Titmen (1993) stressed that firms with high growth tend to have lower FCF, since the money is used on projects with positive NPV. It can thus be inferred that a relationship exists between the amount of FCF and the propensity of firms to manage their earnings by means of discretionary accruals.

c) *Earnings Management*

According to Dechow, Ge & Schrand (2010), the better the quality of earnings information, the greater will be the support for investors to make decisions. This information can come from various sources, but the most used is the financial statements, which are subject to standards imposed by regulators. For Healy & Wahlen (1999), standard setters should consider the conflicts between the relevance and reliability of accounting information under any of the alternative disclosure standards.

Dechow, Ge & Schrand (2010) state that an advantage of accounting standards is the removal of alternative treatments of transactions in favor of a single principle that reflects performance, so that the numbers reported are more informative about earnings, by reducing the opportunities for manipulation. According to Richardson (2000), accounting standards still permit a degree of management discretion in applying the accounting methods used to report results. Earnings management happens when this discretionarity is used to manipulate the accounting numbers.

According to Schipper (1989), earnings management can also be called disclosure management when there is intentional intervention in the external financial report aimed to obtain some private gain. Poor quality financial information thus affects the financial market. Martinez (2008) states that the poor quality of accounting information can come from earnings management, a situation that can create serious allocation inefficiencies between firms as well as provoke unjustifiable distributions of wealth.

According to Bhundia (2012), the accrual accounting regime, used in financial statements to diminish information asymmetry, gives managers leeway to determine the timing of revenue recognition. Likewise, managers have significant control over when to incur and/or recognize spending on research and development, advertising and so on. Hence, they have the means to manage earnings through the timing of recognition of revenues and expenses. Earnings management is one of the most studied themes in accounting because investors attribute great weight to earnings in making their decisions. Some of these studies suggest that little variation in earnings and their persistence are attributes of the quality of earnings (Dechow, Ge & Schrand, 2010).

The quality of earnings can be impaired by conflicts of interest (Jensen & Meckling, 1976). According the authors, this agency problem occurs because of the divergence between managers and owners, since each group tends to take actions to maximize their own wealth. For Bhundia (2012), managers have incentives to manipulate earnings to maximize their benefits, so there is a positive correlation between earnings management and conflict of interest. In turn, DeAngelo, DeAngelo & Skinner (1994) state that the likelihood of manipulating earnings will be greater when the firm is experiencing poor earnings and is reducing dividends.

Jensen (2005) warns that one of the possible causes of dodgy accounting choices is the excessive appreciation of shares and the effort to meet analysts' earnings forecasts, one of the factors affecting managers' continuing tenure. He stresses that the capital market punishes firms that do not meet analysts' expectations, through lower stock prices, and punishes the managers of these companies as well, through lower

bonuses and less job security. Healy & Wahlen (1999) list other possible causes of earnings management, besides the desire to influence market perceptions and boost management compensation, such as reducing the probability of violating loan covenants and avoiding intervention by regulators. Additionally, according to Dechow, Sloan & Sweeney (1996) another motive is the desire to obtain external capital at lower cost.

Irrespective of the reasons firms manage earnings, it is possible to conclude that the use of discretionary accruals is one of the means to do this. Empirical evidence found by Chung, Firth & Kim (2005) and Bhundia (2012) demonstrates that the level of FCF can influence the operationalization of earnings management. Both studies found evidence of a positive correlation between earnings management and free cash flow, especially in firms with low growth perspectives. Nevertheless, other factors can also be involved in this relation.

d) Other Factors Of Earnings Management

According to Dechow & Ge (2006), FCF has been the subject of various studies because it is considered a better measure of cash flow in earnings than operational cash flow, since earnings includes capital charges such as depreciation and amortization that are ignored in operational cash flow. Many studies of FCF have investigated its relation with earnings management, from different perspectives. Tsui, Jaggi & Gul (2001) investigated audit fees of firms with high FCF and low growth. Their results indicated that for these companies the audit fees are higher due to the relationship between agency problems and FCF. Besides this, they found that firms with stronger growth possibilities also pay higher audit fees because they have greater risk. On the other hand, the presence of an independent board of directors tends to reduce uncertainties and inhibit opportunistic practices associated with firms having high growth potential.

According to Jensen (1986), the debt policy interferes in the relationship between earnings management and free cash flow in low-growth companies. The greater the leverage, the less managers will invest in projects with negative NPV, reducing earnings management and consequently audit costs. Richardson (2006) found that in firms with high FCF levels, the level of investments tends to be higher than optimal. Bukit & Iskandar (2009) found that the existence of independent audit committees helps companies with excess FCF by reducing manipulation of profits through earnings management. Chung, Firth & Kim (2005) found evidence that the presence of high-quality auditors and institutional shareholders moderates the relation between surplus free cash flow and discretionary accruals, thus reducing earnings management.

This decrease in earnings management, according to Watts & Zimmerman (1983), results from

the role of the independent auditor in attesting to the reliability of the financial statements. This provides assurance to the shareholders, potential investors and creditors that the income statement and balance sheet closely follow generally accepted accounting principles and reflect the status of the audited company. Hence, auditing reduces the agency costs created by information asymmetry and the problems of control caused by the separation of ownership and management.

Lehn & Poulsen (1989), studying companies that recently went private, identified that the greatest gain for the shareholders was the reduction of costs caused by agency problems related to undistributed FCF. Additionally, they found that the premiums paid to the shareholders are significantly related to undistributed cash flow. Jiraporn et al. (2008) found evidence that earnings management tends to be less prevalent when agency costs are lower. This result was more consistent when factors such as size, profitability, leverage, growth perspectives and information asymmetry were controlled. Their empirical results for the sample studied identified a negative relation between earnings management and agency costs.

Based on the above studies and others, it can be stated that factors such as board makeup, separation of board chairperson and CEO, presence of an audit committee, existence of institutional shareholders and the quality of auditing (being audited by one of the big independent auditors) can influence the relationship between free cash flow and earnings management by manipulation of discretionary accruals.

III. RESEARCH METHODOLOGY

The aim of this article is to verify whether the amount of free cash flow influences the practice of earnings management through discretionary accruals by Brazilian firms with low growth perspectives, and to identify the nature of this relationship and possible factors that can explain it. Hence, the research question is as follows: What is the relation between excess free cash flow (or financial slack) and earnings management by discretionary accruals of Brazilian firms with low growth perspectives? The resulting hypothesis is:

H1 – There is a positive relation between the amount of free cash flow and earnings management by means of discretionary accruals.

a) Sample

The sample was obtained from the Economática database, consisting of 111 observations of companies between 2008 and 2012. We chose this period because in 2008, with convergence of Brazilian GAAP to IFRS according to Law 11,638/2007, listed companies had to start publishing a cash flow statement, without which it is not possible to calculate accruals.

We considered nonfinancial firms with the greatest stock movement on the BM&FBovespa in the years from 2008 to 2012, filtered by excluding companies with total assets equal to zero in any year (since assets is the denominator in the accrual measurement model), as well as those without information on gross profit and net profit and with zero revenue (to eliminate companies not in operation). Additionally, to keep the result of the regressions from being affected by outliers, all observations when the quotient of a value divided by total assets in the previous year was greater than 2 (in absolute value) were excluded from the sample.

The information on the majority holder of the common stock, due to a limitation of the Economática system, was restricted to the most recent one, so that the information on the majority shareholder was uniform for all years, a fact that is a limitation of this study. Although our study period is from 2008 to 2012, we collected data from 2007 for comparison and to obtain differences (variation of revenues used in the model based on Jones). When information on the previous year was not available (in the case of a new company or one that went public in the referred year), we discarded the observation in the regression. This procedure was used both for previous year parameters and for differences where data for the previous year were not available.

b) Variables Used And Earnings Management Model

As in Bhundia (2012), we used the model of Lehn & Poulsen (1989) to measure the amount of FCF. However, we modified this model in line with the particular features of the Brazilian market. In the TAX variable (taxes), besides corporate income tax we included social contribution on profit⁴. We also included the variable JCP (*juros sobre capital próprio* – “interest on own capital”, or better put, interest on stockholders’ equity) because this is an alternative way of distributing profits (in lieu of dividends) in Brazil. In this model, FCF is calculated according to equation (1) below. All the values of the variables are divided by total asset from the previous year:

$$FCF_{i,t} = (OP_{i,t} - TAX_{i,t} - FINEXP_{i,t} - DIV_{i,t} - JCP_{i,t}) / TA_{i,t-1} \quad (1)$$

Where:

$FCF_{i,t}$ = free cash flow of firm i in year t;

$OP_{i,t}$ = operating profit before depreciation of firm i in year t;

$TAX_{i,t}$ = total taxes on income (corporate income tax and social contribution on net profit) of firm i in year t;

$FINEXP_{i,t}$ = net financial expense (or revenue) of firm i in year t;

⁴ Contributions (*contribuições*) are taxes, charged only by the federal government, whose revenue is reserved for specific uses instead of going into the general fund.

$DIV_{i,t}$ = dividends paid by firm i in year t ;

$JCP_{i,t}$ = interest on stockholders' equity paid by firm i in year t ; and

$TA_{i,t-1}$ = total assets of firm i in year $t-1$.

We define free cash flow as the financial slack that is available to the firm for possible investments after satisfying the main operational, financial and fiscal commitments. To measure earnings management we

used a model based on the modified Jones model (Dechow, Sloan & Sweeney, 1995), since this model was used in the works of Bhundia (2012), Chung, Firth & Kim (2005) and Bukit & Iskandar (2009), as a way to maintain comparability of the results. In this model, it is possible to calculate nondiscretionary accruals. The equations are as follows:

$$NDA_{i,t} = \alpha_1 (1/TA_{i,t-1}) + \alpha_2 \{(\Delta REV_{i,t} - \Delta ACCREC_{i,t}) / TA_{i,t-1}\} + \alpha_3 (PPE_{i,t} / TA_{i,t-1}) \quad (2)$$

Where:

$NDA_{i,t}$ = nondiscretionary accruals of firm i in year t ;

$TA_{i,t-1}$ = total assets of firm i in year $t-1$;

$\Delta REV_{i,t}$ = difference in revenue of firm i between year t and year $t-1$;

$\Delta ACCREC_{i,t}$ = difference in accounts receivable of firm i between year t and year $t-1$; and

$PPE_{i,t}$ = property, plant and equipment of firm i in year t .

The parameters α_1 , α_2 and α_3 are calculated by the following equation:

$$TACC_{i,t} / TA_{i,t-1} = \alpha_1 (1/TA_{i,t-1}) + \alpha_2 \{(\Delta REV_{i,t}) / TA_{i,t-1}\} + \alpha_3 (PPE_{i,t} / TA_{i,t-1}) + \varepsilon_i \quad (3)$$

The parameter $TACC_{i,t}$ is the proxy for total accruals in year t and is given by the equation below:

$$TACC_{i,t} = NP_{i,t} - OFC_{i,t} \quad (4)$$

Where:

$NP_{i,t}$ = net profit in year t .

$OFC_{i,t}$ = operating cash flow in year t .

Equation (4) was used in the article of Bhundia (2012) and we used this equation to calculate the total accruals

in the regression of equation (3). This linear regression produced the coefficients α_1 , α_2 and α_3 used in equation (2), which were, respectively, (-3208.154; 0.0000), (-0.046224; 0.0124) and (-0.112232; 0.0000). With these parameters it is possible to calculate the discretionary accruals ($DA_{i,t}$) by equation (5). In this case, it is necessary to assume that $TACC_{i,t}$ represents the sum of the discretionary and nondiscretionary accruals (Bukit & Iskandar, 2009).

$$DA_{i,t} = (TACC_{i,t} / AT_{i,t-1}) - NDA_{i,t} \quad (5)$$

From equations (1) to (5) it is possible to establish a model to measure the relation between FCF and DA (equation (6)). This model uses the variables identified in the literature, limited by the possibility of obtaining data for analysis and observing the peculiarities of the Brazilian market regarding the measurement and disclosure of financial information.

c) EFCF Variable

In the proposed model, the variable responsible for measuring whether there is a relation between FCF in firms with low growth perspectives and earnings management by discretionary accruals is the variable excess free cash flow, or EFCF. This is a dummy variable composed of two other dummy variables. The first of these compares whether the value of FCF calculated by equation (1) for a firm is greater than the median FCF value for all firms in a specific year. If the FCF value is greater than the median, the dummy variable assumes the value one, and zero otherwise. The second of these dummy variables is the price-to-

book ratio. The intuition behind the use of this ratio is that the market recognizes firms with greater growth perspectives, by bidding up the stock price above the book value. Therefore, to capture the firms with low growth perspectives in a determined year, we calculated the price-to-book ratio for all the firms, and assigned a value of one to the dummy variable for those below the median, and zero otherwise.

The variable EFCF was obtained by multiplying the dummy variable FCF by the dummy variable price-to-book, thus obtaining another binary variable (EFCF), with value of one when there is excess FCF in a firm with low growth perspectives and zero in all other cases.

d) Model For Analysis

The proposed model is derived from those used by Chung, Firth & Kim (2005) and Bukit & Iskandar (2009). Except for the dummy variables and the SIZE variable, the others are scaled by total assets the previous year. The model is presented below:

$$DA_{i,t} = \beta_0 + \beta_1 EFCF_{i,t} + \beta_2 E_SC_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 CF_{i,t} + \beta_6 AB_TACC_{i,t} + \beta_7 NM_{i,t} + \beta_8 IFRS_{i,t} + \beta_9 IFRS * EFCF_{i,t} + \varepsilon_i \quad (6)$$

Where:

$DA_{i,t}$ = discretionary accruals, obtained by equation 5 with nominal values (positive or negative according to the case);

$EFCF_{i,t}$ = dummy variable, which assumes the value of 1 when the firm's free cash flow (equation 1) is above the annual median of the sample and the price-to-book ratio (proxy to measure growth perspectives) is below the median for the sample, and 0 otherwise;

$E_SC_{i,t}$ = dummy variable for shareholding concentration, with value 1 when the percentage of common shares held by the largest shareholder is above the annual median of the sample and 0 otherwise;

$SIZE_{i,t}$ = natural logarithm of total assets in year t ;

$LEV_{i,t}$ = total debt divided by total assets the previous year;

$CF_{i,t}$ = difference between the firm's cash flow and the annual median of the sample divided by total assets in the previous year;

$AB_TACC_{i,t}$ = absolute value of total accruals (equation 4) divided by total assets the previous year;

$NM_{i,t}$ = dummy variable that has value 1 when the firm's shares are listed for trading in the Novo Mercado segment of the BM&FBovespa (premium corporate governance segment), and 0 otherwise;

$IFRS_{i,t}$ = dummy variable that assumes 1 for observations in 2010, 2011 and 2012, due to the requirement to use IFRS in those years according to the Instruction 457 from the Brazilian Securities Commission, and 0 otherwise;

$IFRS*EFCF_{i,t}$ = dummy variable that seeks to capture the interaction of the influence of adopting IFRS and the excess free cash flow.

IV. ANALYSIS OF THE RESULTS

Table 1 below shows the relations between the variables obtained by the regression of the proposed model (Equation (6)).

Table 1 : Regression of the model variables

Dependent Variable: DA				
Observations: 1111				
Independent Variables	Coefficient	Standard Error	T-Statistic	Probability
C	-0.044783	0.037291	-1.200897	0.2300
EFCF	0.071314	0.016751	4.257337	0.0000
AB_TACC	-0.373772	0.035128	-1.064018	0.0000
E_SC	-0.025179	0.009541	-2.638986	0.0084
LEV	0.012314	0.017849	0.689939	0.4904
CF	-0.035321	0.042159	-0.837821	0.4023
IFRS	-0.017540	0.009971	-1.759041	0.0788
IFRS*EFCF	-0.047296	0.022141	-2.136063	0.0329
SIZE	0.006254	0.002532	2.470102	0.0137
NM	0.028794	0.009928	2.900168	0.0038
R^2	0.147751			
Adjusted R^2	0.140785			
F-statistic	21.20849			
Prob. (F-stat.)	0.000000			

From Table 1 it can be seen that the coefficient of EFCF was positive and significant at 1%, indicating a relationship between the value of FCF and greater occurrence of discretionary accruals in firms with excess free cash flow and low growth perspectives. The same situation was observed by Bhundia (2012) and Chung, Firth & Kim (2005). According to these authors, the occurrence of excess FCF and earnings management through discretionary accruals is more common in companies with low growth perspectives, since those with better growth prospects tend to use their free cash

flow for investments to boost production or to enter new markets, with the objective of maintaining profitability (Jensen, 1986). This result is consistent with the hypothesis raised, indicating that firms with excess FCF and low growth perspectives can resort to earnings management to improve their profit picture.

The coefficient of E_SC was negative and significant at 1%, unlike observed by Chung, Firth & Kim (2005). Therefore, in our sample, greater ownership concentration tends to reduce earnings management, as predicted by the theory. The LEV variable was not

significant, unlike predicted by Jensen (1986) and observed by Chung, Firth & Kim (2005). CF also was not significant, in contrast to the findings of Chung, Firth & Kim (2005) and Bukit & Iskandar (2009). According to these authors, the expected relationship is negative, since firms with high cash flow should tend to use DA to smooth income so as to meet analysts' earnings projections and increase market value (Dechow, Ge & Schrand, 2010).

Size (SIZE) was positive and significant at 5%. This was also observed by Chung, Firth & Kim (2005) and Becker et al. (1998), who used this variable as a control to keep it from interfering in the error term in function of unidentified variables not included in the model. Hence, size is a factor that should be controlled in measuring earnings management. According to Becker et al. (1998), the coefficient of AB_TACC tends to be negative because nondiscretionary accruals tend to be negative due to depreciation. Since positive DA reduces the absolute value of total accruals (AB_TACC), these two should be negatively related. This can be observed in Table 1, where the coefficient of AB_TACC is (-0.373772; 0.035128).

We used the NM variable as a proxy for the influence of corporate governance on earnings management. It presented a positive coefficient

significant at 1%. This means that in our sample, belonging to the Novo Mercado trading segment did not inhibit earnings management by means of discretionary accruals. This runs counter to the expectation that better corporate governance should have a negative relationship with DA, as found by Martinez (2009).

The variables IFRS and IFRS*EFCF try to measure the relationship of the variables of equation (6) in annualized form. Barth, Landsman & Wayne (1998) stated that the implementation of IFRS should improve the quality of accounting information. They identified that the level of earnings management of firms in 21 countries declined after adoption of IFRS. Therefore, we expected to find a negative relation between IFRS and DA.

a) Other Analyses

With respect to EFCF, to strengthen the result we conducted other analyses. We divided the sample of observations into two subsamples, one with EFCF = 1 and the other with EFCF = 0. Table 2 below shows that the average of DA is greater for the subsample with EFCF = 1 and that the average DA values in the two subsamples are statistically different. This reinforces the positive relationship between discretionary accruals and excess free cash flow.

Table 2 : Difference of means test of the dependent variable DA in the subsamples with EFCF = 1 and EFCF = 0

	<i>EFCF = 1</i>	<i>EFCF = 0</i>
Mean DA	0.041313593	0.002259552
Variance of DA	0.024195093	0.023646446
Observations	218	893
Hypothesis of difference of means	0	
Df	328	
T-statistic	3.330946271	
P(T<=t) single tail	0.000482095	
Single-tail critical t-value	1.649512493	
P(T<=t) two tail	0.000964191	
Two-tail critical t-value	1.967222827	

Additionally, because we initially analyzed all the observations for 2008 to 2012 together due to the small number of observations, we also carried out regressions in each year individually to determine the year-on-year behavior. The results are reported in Table 3.

The table shows the EFCF coefficient was positive and significant in 2008 and 2010. This fact corroborates the results indicated in Tables 1 and 2. Therefore, these results provide further evidence that in the period studied the variable EFCF was positive, contributing to the non-rejection of hypothesis H1. As stated before, there was a gradual decline in the coefficient of EFCF over the years, especially starting in 2010. Because of this finding, we sought to identify some phenomenon that could have affected the DA x

EFCF relation. The likeliest possibility was the existence of CVM Normative Instruction 457/2007, which made it mandatory for listed corporations to present financial statements according to IFRS (International Financial Reporting Standards) starting in 2010.

Table 3 : Regressions of the model by year

Dependent Variable: DA	2008	2009	2010	2011	2012
Independent Variable	Coefficient P-Value	Coefficient P-Value	Coefficient P-Value	Coefficient P-Value	Coefficient P-Value
C	-0.102403 0.2557	-0.293541 0.0027	-0.007346 0.9145	0.107178 0.0575	0.068631 0.2077
EFCF	0.084486 0.0018	0.022323 0.4285	0.046632 0.0285	0.004746 0.7674	-0.009336 0.5587
AB_TACC	-0.341144 0.0001	0.249032 0.0027	-0.530525 0.0000	-0.873685 0.0000	-0.757328 0.0000
E_SC	-0.042414 0.0783	0.004995 0.8515	-0.032637 0.0578	-0.029847 0.0300	-0.010332 0.4310
LEV	-0.045857 0.2593	-0.074578 0.1602	0.170864 0.0000	-0.011097 0.6758	0.073419 0.0030
FC	-0.204782 0.0292	0.040591 0.7199	-0.047671 0.5057	0.158659 0.0163	-0.202663 0.0376
SIZE	0.011385 0.0658	0.020095 0.0029	0.000594 0.8983	-0.001470 0.6983	-0.002554 0.4778
NM	0.045321 0.0849	0.046661 0.0936	0.035765 0.0484	0.008121 0.5691	0.006511 0.6332
R ²	0.223290	0.080262	0.310619	0.608132	0.370325
Adjusted R ²	0.196897	0.051261	0.289360	0.596843	0.344847
F-statistic	8.460198	2.767589	1.461155	5.387236	1.453498
Prob. (F-stat.)	0.000000	0.008902	0.000000	0.000000	0.000000
Observations	214	230	235	251	181

Therefore, we included the variables IFRS and IFRS*EFCF in the proposed model (equation (6)) to verify whether the adoption of IFRS had an effect on the relations of the dependent variable DA and the other variables. In Table 1 it can be seen that IFRS was negative and significant at 10%, indicating this adoption acted to reduce discretionary accruals, as suggested by Barth, Landsman & Wayne (1998). The interaction variable IFRS*EFCF was negative and significant at 5%, indicating that the adoption of IFRS acted to limit the EFCF x DA relation. Hence, the reduction of the coefficient of EFCF over the years can have been a consequence of the convergence to IFRS in Brazil. Considering the additional yearly analyses performed along with the analysis of the sample as a whole, we can state there is a positive relation between excess free cash flow of low-growth companies and earnings management by means of discretionary accruals.

Another point to consider is the result of the NM variable, indicative of better corporate governance. To assess the consistency of the results, we again generated two subsamples, the first formed of firms listed in the Novo Mercado trading segment of the BM&FBovespa (NM = 1) and the second of firms listed in any of the other segments (NM = 0). We then ran a regression of the model for each subsample.

As can be seen in Table 4, the coefficient of EFCF was positive and significant at 1% for the NM = 1 subsample and not significant for the NM=0 subsample. A possible explanation for the fact that companies listed in the Novo Mercado had higher occurrence of positive discretionary accruals is the dispersed shareholder base, due to the requirement for a minimum free float. Despite the higher governance standards, this greater ownership dispersion might act to raise information asymmetry, generating a greater possibility or opportunity for using discretionary accruals to manage earnings.

Table 4 : Regression of the subsamples NM = 1 and NM=0

Variable	NM=1		NM=0	
	Coefficient	P-Value	Coefficient	P-Value
C	-0.118303	0.0908	0.027490	0.5361
EFCF	0.072453	0.0012	0.028796	0.1978
AB_TACC	0.287037	0.0000	-0.551532	0.0000
E_SC	-0.029443	0.0254	-0.013428	0.2746
LEV	0.011241	0.6584	-0.008344	0.7185
FC	-0.064210	0.1182	0.063176	0.4274
SIZE	0.008916	0.0722	0.002641	0.3677
IFRS	-0.007661	0.5605	-0.019735	0.1357
IFRS*EFCF	-0.066528	0.0289	-0.005769	0.8410
R ²	0.128067		0.243707	
Adjusted R ²	0.111808		0.234595	
F-statistic	7.876318		2.674584	
Prob. (F-stat)	0.000000		0.000000	
Observations	438		673	

V. CONCLUSIONS

Our aim was to verify whether in the Brazilian context companies with excess free cash flow (FCF) and low growth perspectives have a greater tendency to manage earnings to increase profits. Bhundia (2012) and Chung, Firth & Kim (2005) have already studied this phenomenon in other countries. The result reported here indicates that just as in developed financial markets, in Brazil there is a positive relation between the amount of FCF and discretionary accruals. This result corroborates the agency theory of Jensen & Meckling (1976), according to which managers tend to take actions to maintain the highest level of resources possible under their control, creating a conflict of interest with the shareholders, who would prefer to receive those resources as dividends.

As found by Chung, Firth & Kim (2005), size in this study had a positive relation, indicating that the larger the firm, the more likely it is that managers will manipulate accruals, since these firms tend to have greater capacity to generate accruals. Shareholding concentration had a negative and significant relation with DA, indicating that shareholding concentration is a factor that deters earnings management in the Brazilian market. The likely explanation is that in firms with a single majority shareholder or controlling block, managers' interests tend to be more aligned with the interests of the owners, who have little interest in managing earnings to increase profits, since maintaining the resources in the firm maximizes their personal wealth anyway. Cash flow was not significant, in contrast to the observation of Chung, Firth & Kim (2005), and leverage was not significant, unlike predicted by Jensen (1986) and found by Chung, Firth & Kim (2005).

A surprising finding is that companies listed in the Novo Mercado segment tend to manage earnings upward, unlike found by Martinez (2009), studying a period before the 2008 crisis and also a period when the Novo Mercado was not as popular a trading venue as it has become in recent years. This study covers the crisis year and the next four years, so the financial crisis and its aftermath could have influenced the result. In turn, the full adoption of IFRS in 2010 contributed to reduce the use of positive discretionary accruals. This influence was also found between EFCF and IFRS, indicating that in the presence of excess free cash flow in the period after implementation of IFRS, this acted to weaken the influence of FCF on the use of discretionary accruals to manage earnings.

There are other important implications of the results. In the Brazilian context, FCF is a relevant variable affecting the practice of earnings management, mainly in firms with low growth perspectives, because these firms' executives tend to manage earnings to avoid reporting lower profits and maintain resources in the company instead of distributing them to the shareholders. Another important aspect is the indication that the adoption of IFRS improved the information quality of earnings, by reducing information asymmetry between managers and investors.

In closing, this study sheds new light on earnings management by means of discretionary accruals and the relation with free cash flow. It also casts a new eye on the effect of adopting IFRS, indicating relevant results on the quality accounting information and suggesting that other factors can contribute to/restrict the occurrence of earnings management in Brazil. These can be the targets of new studies, such as the effect of the quality of auditing and

other corporate governance practices that restrict earnings management. Besides this, an analysis over a longer horizon can better reveal the influence of listing in the Novo Mercado segment on earnings management by accruals in Brazil.

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