CAPITAL MARKET EFFECTS OF INCOME SMOOTHING IN BRAZIL

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ABSTRACT

Income smoothing is defined as the management of results to reduce the variability of accounting results. If the smoothing leads to more information be reflected in stock price, is likely to improve the allocation of resources, being a critical factor in the portfolios creation. The purpose of this study aims to build metrics to determine the degree of smoothing of results of public Brazilian companies, decomposing them into two groups: the group of smoothers companies and group of non smoothers companies, and additionally submit evidence on the long-term relationship between the degree of smoothing and the risk and return stock, size, the industrial sector for the period 1998-2007 and finally break what would be the factors explaining the practice of smoothing results of opened Brazilian companies. The database of search was the Economatica and CVM, the search sample was focused on 145 companies. In the segregation of groups, it was found that Brazilian smoothers companies have a smaller degree of market risk than non smoothers companies. In average terms, the beta of companies in the smoothers group is significantly lower than the group of non smoothers companies. Regarding to the return, it was found that the abnormal return adjusted by the market of smoothers companies, when annualized were significantly higher, in respect to size are significant evidence that smaller companies are more prone to have the practice of smoothing. Differences in the average of groups were confirmed when subjected to non-parametric and parametric tests both in methodology in cross section as time series, indicating there is a statistically significant difference in performance in the Brazilian market from those companies that have a smoother profile from non smoother.

Keywords: Income Smoothing, Abnormal Return, Risk, Economic Sectors

I. INTRODUCTION

Earnings management is an issue that is worrying the researchers for several years and there is now many lines of research in this field. Within this vast subject, are the so-called income smoothing. In particular, the income smoothing is one of the aspects of earnings management that has attracted significant attention by the literature of finance and accounting. Indeed, this is a trend inherited from the past and full force today, which aims to reduce the possible fluctuations in income to stabilize it over time.

Most papers published on the subject focuses on analyzing the factors that lead to the behavior of smoothing or contrast the existence or not of this phenomenon in different sectors. In the international literature, the work that has studied the relationship between market returns and the degree of income smoothing in business are those of Michelson, Jordan-Wagner and Wooton (1995, 1999), Booth, Kallunki and Martikainen (1996) and Bin, Wan and Kamil (2000), Iñiguez and Poveda (2004), Bao and Bão (2004), Tan and Jamal (2006), Tucker and Zarowin (2006) and Grant, and Parbonetti Markarian (2007), analyzing the North American markets, Finnish, Malay and Spanish. If we restricted the analysis only in the long term, the international literature account only with the work of Michelson, Jordan-

Wagner and Wooton (1995, 1999) and Iñiguez and Poveda (2004) who come to conclusions very different working with different methodologies.

In this paper there was a review of the effect of income smoothing in the Brazilian stock market, with the intention to verify the association between the degree of income smoothing and its effect on the market, particularly in the level of risk and shareholder return.Brazil provides an interesting environment to test the effectiveness of income smoothing under asymmetric information. Is the strategy of income smoothing more effective in a market as the Brazilian?

With the motivation and objectives set, the article is organized in thematic sections. After the introduction, in the second section, presents a brief description of income smoothing as well as a review of the work that has dealt with the issue. Continued presents the design of the research and the methodology of investigation and analysis of abnormal returns. In the fourth section, they are the results of empirical analysis performed. Finally, it summarizes the main findings appreciated Brazilian stock market.

II. INCOME SMOOTHING

According to Ronen e Yaari (2007), there are two types of *smoothing*: real and artificial. *Real smoothing* involves production and investment decisions that reduce income variability. On the other hand, *Artificial Smoothing* is obtained through accounting practices.

Michelson, Jordan-Wagner and Wooton (1995) do an empirical analysis, for the long run, between *smoothing* and stock profitability. To do this, they use U.S. companies' stock information and use that as a sample. These authors classify the companies between *smoothers* and *non-smoothers* based on the Sales variation coefficient VS. Earnings coefficient of variation. Using Geometric Series of Return as a basis for calculation, they show that the *non-smoother* sample presents a bigger average income when compared to the *smoother* sample. It is important to say that that the monthly average income used in this study are not adjusted for risk or market (Normal Returns). There is also a difference in size and risk between the two samples: the *smoother* sample had a bigger size and a smaller beta when compared to the *non-smoother*, even though there is no statistical evidence that supports this argument.

In the meantime, Booth, Kallunki and Martikainen (1996) study the market of Finland, to see if the abnormal return, derived from the disclosure of earnings, is different from companies that show *smoothing* behavior (and the ones that don't), all based on the method of variation coefficient. The results show that the size of *smoother* companies is bigger than the *non-smoother*, and the former also show smaller betas when compared to their counterparts. When speaking of abnormal returns, the *non-smoother* companies show a better market performance against variability in income when compared to the *smoother* ones.

More recently, Michelson, Jordan-Wagner and Wooton (2001) used their study of 1995, to see if the accounting performance measures are related to *income smoothing*, but this time, using abnormal returns. The methodology of this analysis bases its results on the accumulation of abnormal returns using arithmetic series. The results show that smoother companies show a significantly bigger abnormal return that the non-smoother ones. The smoother companies, in relation with size measured through market value of liquid assets, show that smoother companies are bigger than the non-smoother ones.

Another study that deserves attention is the Iniguez and Poveda study (2004) that researched the appreciation the Spanish market gives to smoothing behavior. This is done through a long-run study (10 years) of the relationship between *income smoothing*, risk and abnormal return. Using the method of coefficient of variation, the results obtained show a behavior pattern in returns and beta related to the degree of smoothing (variation of earning in this study are adjusted by discretionarily. The empirical evidence leads to think that the smoother companies obtain a bigger return in the capital market than the non smoother ones.

In relation to systematic risk, smoother companies present less risk. In summary, the study concludes that the capital Spanish market does not process information on income smoothing efficiently, by permitting the reduction of systematic risk of stocks and improving their return through management of accountable earning.

The relationship between *income smoothing* and the value of a firm is an interesting subject, in which empirical knowledge is known for the US, Finland, and Spanish markets. In addition, there are very few studies and works on the subject that show how the market values and reacts to the practice of *income smoothing*. With this work, an income smoothing analysis is done of the Brazilian market, obtaining empirical evidence and the value of a firm in Brazil.

III. HYPOTHESIS

Smoothing of results, risk and stock return - The hypotheses are: - **H (01):** There is NO relationship between income smoothing and systematic risk. - **H (02):** There is NO relationship between income smoothing and the company's abnormal return.

Empirical evidence shows that the level of risk is smaller in companies that have smoothing behavior. (LEV; KUNITZKY, 1974; CHALAYER, 1994; MICHELSON et al., 1995; IÑIGUEZ; POVEDA, 2004). Meanwhile, the authors agree that the smoothing of results reduces the uncertainty associated with future cash-flows of the company. This is created by reducing the variation of results of the company due to outside economic conditions. A few past studies included in their analysis that the company's return is associated with income smoothing, even though the opinion on the subject is diverse. On one side, there are studies that find evidence that smoothing is found more frequently in companies with smaller returns. (ARCHIBALD, 1967; WHITE, 1970; ASHARI et al., 1994). A possible justification, is that companies with less income are more inclined to smooth-out their results, because they can communicate to stock and shareholders a perception of less risk and a more controlled set of results in income performance. On the other side of the coin, Carlson and Bathala (1997) have empirical support that validates their hypothesis that, the more lucrative a company is, the more opportunities the managers have to normalize the variability of results.

Other works in income smoothing say that the smoothing results in a better evaluation of the company by investors. A justification for this increment in the expected value of the company, is that stable results are derived from a good management of the company. (RONEN; SADAN, 1981; GIBBINS et al., 1990; CHANEY; LEWIS, 1995; BHAT, 1996). Having said this, is convenient to say that the value of the company is positively associated with the magnitude of the reduction in variation of results, through income smoothing.

Income smoothing and size - H (03): There is NO relationship between income smoothing and the size of a company. The positive theory of accounting has advanced along with the development of new variables that companies use in order to understand income smoothing techniques. One of the hypothesis developed by this theory associates income smoothing practices to the political visibility of the company and political costs derived from a heightened attention of public policy. Therefore, companies with a heightened political visibility are more inclined to smooth-out their results because variations on results attract the attention of public policy. It is important to notice that the bigger the company is, the higher the political costs it has. Therefore, bigger companies have are more inclined to apply income smoothing because they are more visible socially and "under the eye" of the government and the general public. (MOSES, 1987; CRAIG; WALSH, 1989; CHALAYER, 1994; MICHELSON et al., 1995; 2000; IÑIGUEZ; POVEDA, 2004).

Income smoothing and economy sector of the company - H (04): There is NO relationship between income smoothing and the economy sector of the company.

Studies previously developed by Ronen, Sadan (1981), Belkaoui, Picur (1984), Ashari et al. (1994), Kinnunen et al. (1995), Michelson et al. (2000), Iñiguez and Poveda (2004)

concluded that, by operating in different economic sectors, companies smooth-out their results in different proportions. This is possible because companies in some sectors have better opportunities and are more able to smooth-out their results, due to how positively external factors interact with the economy sector the company is in.

Explanatory classification variables of income smoothing

In this section, the intention is to find the classification variables that are statistically significant to be able to implement income smoothing, using a forward stepwise *logistic regression*, in which the variables are tested one by one. Several studies (Chalayer, 1994; Michelson et al., 1995; Iñiguez and Poveda, 2004) obtained empirical evidence that supports the hypothesis that income smoothing is used to reduce the variability of the results and cash-flows, as a mean to reduce perceived risk of the company (Beta). In addition to this, the authors that are involved in this topic, all agree that income smoothing increases the value of the company. (TRUEMAN; TITMAN, 1988; CHALAYER, 1994; CHANEY; LEWIS, 1995; 1998).

Separately, there are certain characteristics of an economic sector that affect the smoothing, having as basis the advanced hypothesis of the Positive Accounting Theory (PAT) to justify the accounting practices of the companies and to understand income smoothing techniques. This theory, qualified as positive according to Watts e Zimmerman (1986), explains accounting policies by the opportunistic approach by managers which is driven by the objective of maximization of profits.

IV. METHODOLOGY

Sample

In order to analyze income soothing practices in the Brazilian market, aleatory samples of companies from the Stock market of São Paulo were selected. It is common practice to perform smoothing practices in the medium-long run (COPELAND, 1968; ECKEL, 1981; CHALAYER, 1994) therefore, the sample will be composed by companies selected from a 10 year period (1998 - 2007), considering the following conditions:

- The companies selected must have the WHOLE 10-year period, and they should have disclosed quarterly reports during the whole 10-year period
- The companies that show signs of mergers, acquisitions, alterations in fiscal year, or any other significant change, will not be accepted in the sample.

As a result of these conditions, a population of 318 companies was obtained through the Económatica database and the external disclosed reports of the CVM (this is the Brazilian SEC of United States). These companies where discriminated based on the Eckel (1981) and Leuz (2003) smoothing measures to give a final sample of 147 companies for the 1998-2007 period, divided in two groups: 64 smoothers and 83 non-smoothers. These companies will serve as basis for the different analyses.

Smoothing Criterion - Eckel's Criterion (1981)

The methodology used on income smoothing and the results shown for the value of a firm, are based on the model of coefficient of variation proposed by Eckel (1981) and is used later by Booth, Kallunki and Martikainen (1996), Michelson, Jordan-Wagner and Wooton (1995; 2001), Bin, Wan and Kamil (2000), Bao and Bao (2004). If net income is related to sales by a linear function then it is demonstrated that unitary variable costs are maintained constant through time, fixed costs do not decrease and gross revenue cannot be smoothed-out. Therefore, the variation coefficient of sales is smaller to the variation coefficient in net income. If this doesn't happen, Eckel (1981) shows that the company is artificially smoothing out net income.

$$CV \, \Delta\% \, NetIncome \leq CV \, \Delta\% \, Sales \Rightarrow Smoothing$$

Where:

$\Delta\%$ Income = Annual change in income

Δ% Sales = Annual change in sales

$$CV(x) = \sigma(x) / \mu(x)$$

From this logic, many relevant works have been disclosed in the last 20 years, such as the ones of Albrecht e Richardson (1990), Ashari et al. (1994), Booth, Kallunki and Martikainen (1996), Michelson, Jordan-Wagner and Wooton (1995; 2001), Bin, Wan and Kamil (2000), Bao and Bao (2004). They all calculated the measure of smoothing as an Adimentional Index of the fraction between the coefficients of variation (CV):

$$IA_1 = \frac{CV\,\Delta\%NetIncome}{CV\,\Delta\%Sales} \qquad [1]$$

Based on this, it is assumed that an index lower than 1 (one) in absolute value, indicates the presence of income smoothing because the coefficient of variation of net income would be smaller than CV of sales. Eckel (1981) demonstrated that this situation was a result of income smoothing performed by managers in their respective companies. In contrast, the model used in this study was altered using a Smoothing Index (SI) between 0,90 and 1,10 as the "grey area". Economática. This procedure is necessary to reduce the error classification in concordance with the methodology of Chalayer, (2004).

$$0,9 \leq \left[\left| \frac{CV\,\Delta\%NetIncome}{CV\,\Delta\%Sales} \right| \right] \leq 1,10$$

$$Smoothing \leq \left| Gray\ Area \right| \leq Non\ Smoothing$$

In this work, there is a selection criterion between smoothers and non-smoothers based on the SI. The result of this SI will give the basis to prove the hypothesis that management is motivated to lower the variability in results and cash flow; all of this with the objective to reduce the firm's perceived risk.

The criterion of using the SI as a basis of discrimination between smoothers and non-smoothers, is founded on the following reasons:

a)   In the first place, for Bao and Bao (2004), the index has in consideration the aggregated effect of all the accounting variables that smooth-out net income, describing a behavior pattern of a company in relation to income smoothing. Companies usually do not choose the accounting procedures arbitrarily; they do this considering the overall effect of the result on the market. Because of this, choosing only one variable as the only basis for smoothing, could lead to wrong conclusions. This is because there is the aggregated effect of other variables that were not taken into account.

b)   Second, according to Albrecht and Richardson (1990), another advantage of this methodology is that it provides a measurement of the variability of the sample and therefore, permits the comparison between different groups. Besides this, it provides the ability to compare data that has a different standard deviation and mean. These qualities make the SI in a practical instrument for the selection of groups based on their degree of smoothing. Meanwhile, Eckel (1981) considered that the main weakness of this methodology is the failure to recognize the companies, which have reduced the variability of their net income, as smoothers (this reduction in net income should not be greater than their reduction in sales variability).

The methodology of the coefficient of variation demonstrates that the more the SI tends to zero, the more "smoothed-out" the company is. Generally speaking , the coefficient of variation is calculated from the change (Δ) of results from one year to another. This assumes a tendency of the results to increase and smooth-out. (Eckel, 1981). Furthermore, despite the many procedures managers have in order to disclose a series of smoothed results,

these procedures do not permit a perfect income smoothing result. Therefore, the coefficient of variation will never be zero, and there is a need to determine the level (arbitrary) at which the income smoothing should take place. There is also a need to introduce the variable of the economic sector the company is at: if the CV of the firm is lower than the average CV of its sector, the firm is classified as a smoother that is intentionally smoothing-out their accounting numbers. It is important to remember that the levels set for the CV are arbitrary (ECKEL, 1981).

Eckel (1981) uses the CV of net income and sales to demonstrate that income smoothing is a natural process. He bases this in the hypothesis that sales and net income are naturally bonded. Then, the smoothing process is intentional if sales are less smoothed than net income:

NI: Net income   S: Sales   FC: Fixed Costs

v: Ratio-fixed costs to sales e_t: Error from Regression that relates fixed costs to sales

Eckel defines variation of the different variables in the following manner:

$$\Delta S = S_{t+1} - S_t$$
$$\Delta FC = FC_{t+1} - FC_t$$
$$\Delta NI = NI_{t+1} - NI_t$$
$$\Delta e_t = e_{t+1} - e_t$$

In this way, this methodology demonstrates that, under the stated conditions, the income smoothing is intentional if the CV of net income is lower than the CV of sales.

Necessary conditions:

$$i) NI_t = S_t - v_t \times S_t - FC_t$$
$$ii) FC_{t+1} \geq FC_t \succ 0$$
$$iii) v_{t+1} = v_t = v \text{ between } 0 \prec v \prec 1 \qquad \text{[a]}$$
$$iv) Cov(\Delta V_t, \Delta e_t) = 0 \quad et \rightarrow E(e_t) = 0 \quad \forall_t$$
$$v) 1 - v - K \succ 0$$

Where:

K: represents the coefficient that relates fixed costs to sales.

The first condition says that net income is equal to the difference between sales and costs (fixed+variable). By hypothesis, fixed costs always increase with time and marginal variable cost is constant from one period to another.

To demonstrate this, Eckel shows that fixed costs can be defined in function of sales:

$$FC_t = \alpha + \beta V_t + e_t \qquad \text{[b]}$$

Therefore:

$$\Delta NI_t = (1-v)S_t - \Delta FC \qquad \text{[c]}$$
$$\Delta FC_t = K \times \Delta S_t + \Delta e_t \qquad \text{[d] from [b]}$$
$$\Delta NI_t = (1-v)\Delta V_t - K \times \Delta V_t - \Delta e_t \qquad \text{[e] from [c] and [d]}$$
$$\Delta NI_t = (1-v-K)\Delta S_t - \Delta e_t \qquad \text{[f] from [e]}$$

From equation [6]:

$$\mu(\Delta NI_t) = (1-v-K) \quad \mu(\Delta S_t) \qquad \text{[g]}$$
$$\sigma(\Delta NI_t) = (1-v-K)^2 \; \sigma(\Delta S_t) + \sigma(\Delta e_t) \qquad \text{[h]}$$

From [g] e [h], we have:

$$\frac{[\sigma(\Delta NI_t)]^{1/2}}{\mu(\Delta NI_t)} \geq \frac{[(1-v-K)^2 \; \sigma(\Delta S_t) + \sigma(\Delta e_t)]^{1/2}}{(1-v-K) \quad \mu(\Delta S_t)}$$

$$\frac{[\sigma(\Delta NI_t)]^{1/2}}{\mu(\Delta NI_t)} \geq \frac{[(1-v-K)^2 \; \sigma(\Delta S_t)]^{1/2}}{(1-v-K) \quad \mu(\Delta S_t)}$$

$$\frac{[\sigma(\Delta NI_t)]^{1/2}}{\mu(\Delta NI_t)} \geq \frac{[\sigma(\Delta S_t)]^{1/2}}{\mu(\Delta S_t)}$$

Both members of the equation represent the coefficient of variation. Therefore, it can be concluded that the smoothing is intentional when the CV of net income is smaller than the CV of sales. Otherwise, the smoothing is "natural."

Smoothing Criterion according to Leuz (2003)

The criteria explained here is a result of the empirical study done by Leuz, Nanda and Wisocky (2003), Francis et al. (2004). Managers can omit changes in economic performance by making real operating decisions through the use of financial reports. (LEUZ et al., 2003). Smaller values of this criteria show that, *ceteris paribus*, managers have the power to freely apply income smoothing shown in accounting reports. Operational cash-flow is indirectly calculated through the lowering of accruals to net income. First of all, we apply this criterion on each firm of the sample with estimation in a time series:

Net Income = Operational Cashflow (OCF) + Accruals

The second criteria to measure the degree of smoothing at Brazilian companies is:

$$IA_2 = \frac{\sigma \; (Operational\_Income_{it})}{\sigma(Operational\_CashFlow_{it})}$$

Managers have the ability to use discretion in order to mask economic changes in the cash-flow of the firm. For instance, they can advance earnings still in the future or delay actual costs in order mask poor economic performance (LEUZ, 2003). Besides this, managers usually do not show a perfect performance because they create reserves for the future. Therefore, the accruals are used to amortize changes in cash-flow and end-up having a negative correlation with the variations in operational cash flow of the firm. This negative correlation is a natural result of the *accruals*. (DECHOW, 1994; LEUZ 2003) Having a high negative correlation means that the company has used the technique of income smoothing.

In this way, the third criterion is the negative correlation between variation in accruals and variations in operational cash-flow.

$$IA_3 = \rho(\Delta Total \; Accruals_t, \Delta \; Operational \; CashFlow_t)$$

Smoothing Metrics

Another auxiliary criterion is used to confirm income smoothing. This criterion is based in the linear regression and semi-logarithmic models. Using this, it is possible to determine if the smoothing company´s net income series are less variable than the non-smoothing ones.

The linear econometric model:

$$NI_{it} = \alpha_{i1} + \beta_{i1}t + e_{it1}$$

a)   The semi-logarithmic econometric model:

$$NI_{it} = \alpha_{i2} + \beta_{i2}t + e_{it2}$$

Where:

LL_{it}: Net income of the company in quarter t

t: period   *t*=1,2,.......53.

It can be shown that the degree of income smoothing for smoothing companies is show by a higher R^2 or a smaller Akaike and Scwartz coefficient. This happens because the quarterly data of net income of a smoothing company is less variable than the non-smoothing

ones; this results in that the adjustment curves would be explained by data from companies that have less variability in net income.

Metrics for Abnormal Returns

This work assumes that the information on income smoothing is delivered to the market with regularity and prices are adjusted progressively to that information. This allows researchers to have a correct Picture of how the market values the practice of income smoothing and a long-run association study is performed, very similar to the studies Michelson, Jordan-Wagner and Wooton (1995; 2001).

In this type of long-run study, the mathematical criteria selected and the abnormal returns methodology are very important due to the fact that long-run results are very sensitive.

Annual earnings are taken into consideration for the analysis of abnormal returns for each asset. The Ibovespa index of all the quoted Brazilian titles (1997-2006) is used to measure market profitability. Abnormal returns (AR) are defined as:

$$AR_{it} = R_{it} - R_m \qquad [2]$$

Where:

$AR_{i,t}$: abnormal return of asset i in year t

$R_{i,t}$: return of asset i in year t

R_m: return of market portfolio in year t

In order to calculate abnormal returns, a hypothesis on the definition of abnormal returns has to be assumed; there are many opinions on this subject. In this work, the Market Return variable has been used as a benchmark in order to calculate abnormal returns. To be able to estimate the Beta of each asset, many regressions for the past 36 periods until month t were performed. In this month t, the abnormal return of each asset is calculated as follows:

$$R_{it} = \alpha + \beta \times R_{mt} \qquad [3]$$

Where

β : Systematic Risk of asset I in the period [t-T,t-1]

Based on these returns, the objective of this study is to see if the market is efficient in gathering information on smoothing or not.

The analysis of *cross-section* returns made previously has to be interpreted with care due to the bias, as stated by Michelson et al. (2000) and Bin, Wan and Kamil (2000). The methodology of time series used by Bao and Bao (2004) and Iniguez and Poveda (2004) will be used in order to increase the knowledge of abnormal returns (smoothing and non-smoothing companies). In this case, the procedure id to make aleatory monthly portfolios in which the monthly abnormal return is calculated. This is done by calculating the average abnormal return of each asset. This procedure will be repeated for each month during the whole period of time, having τ observations (τ= 60 months):

$$AR_{p,t} = \frac{\sum_{j=1}^{n=p} AR_{j,t}}{np} \quad t = 1, 2, ..., n \quad [4]$$

Where, $AR_{j,t}$ is the abnormal return of asset j in month t, t is the number of months in the sample, p shows the number of portfolios and Np is the number of titles that make the portfolio p.

The significance of each portfolio´s average monthly abnormal return is used in order to show the existence of abnormal returns. Shown below is the mentioned average as well as the formula to analyze if the average is substantially different from zero:

$$MMAR_p = \frac{\sum_{j=1}^{t} AR_{p,t}}{t} \qquad [5]$$

$$t^* = \frac{MMAR_p}{\sigma(AR_{p,t})/\sqrt{t}} \rightarrow t \ student \ (t-1) \ [6]$$

Where $AR_{p,t}$ is the abnormal return of the portfolio p in month t, *MMAR* is the mothly mean abnormal return of portfolio p, t is the number of months of the study period. With the previous procedure a time series is adjusted by the obtained returns by stockholders for each level of risk.

In order to see if the Jensen Alfas are substantially different from zero and contrast different risk levels between portfolios, another contraste em serie temporal, based on CAPM estimations, will be used. To do this, the return of each portfolio is measured as the average return. This procedure results in returns with τ observations (τ= 60 months):

$$R = \frac{\sum_{j=1}^{n=p} R_{j,t}}{N_p} \rightarrow t = 1, 2, \ldots, t \quad [7]$$

Where, $R_{j,t}$ is the abnormal return of asset j in month t, t is the number of months in the sample, p shows the number of portfolios and Np is the number of titles that make the portfolio p.

Once the time series retuns of esach portfolio is obtained, then the adjusted abnormal return is obtained. This return is adjusted by risk through Jensen´s Alfa; this allows an easier look at the differences in risk from each portfolio:

$$R_{i,t} - r_{ft} = \alpha_i + (R_{mt} - r_{ft}) \times \beta + \mu \ [8]$$

Additionally, in order to analyze an arbitrage portfolio the following model is estimated:

$$R_{1t} - r_{4t} = \alpha_1 + (R_{mt} - r_{ft}) \times \beta_A + \mu_{At} \quad [9]$$

The regression shown is basically equation [8] applied to the first smoothing group and the second non-smoothing group, and then the difference between these two values. As a result, returns from the smoothing group are significantly superior to those of the non-smoothing group.

In model [9], the coefficient α_A excess return adjusted by risk for the smoothing portfolio VS. the non-smoothing portfolio; $\alpha_A = \alpha_1 - \alpha_4$. A positive coefficient and significant in its magnitude, would indicate an excess of return from smoothing companies VS. the non-smoothing ones. The coefficient β_A measures differences in risk from both portfolios; $\beta_A = \beta_1 - \beta_4$. By contrasting the meaning of this coefficient, it can be inferred if differences in systematic risk are present at smoothing and non-smoothing companies.

Factors that explain Income Smoothing

A logistic regression was applied in order to provide a stronger basis to the results obtained. The idea is to classify a group of companies that do smoothing and the ones that don´t, based on risk and return parameters and control variables. The variables that will be used are the following: i) Stock volatility; ii) Size (net revenue); iii) Abnormal Return e iv) Beta.

The advantage of the logarithmic (logistical) regression is that it allows a multivariate perspective to be incorporated to the study. This new perspective includes other variables of control that could have an effect on the result. When speaking of the models of logarithmic regression, the dependent variable is usually a binary variable and the independent variables could be categorical or continuous.In this case, the observations will be classified in one of two mutually exclusive categories (1 or 0). Therefore, the categories feature soothing and non-smoothing companies. A dependent binary variable (Y) could have the following values:

- 1 if the company performs income smoothing

- 0 if the company does not perform income smoothing

A *forward stepwise* procedure is used in this study in order to determine which variables are more efficient in the classification of companies as smoothers or non smoothers. Two forward stepwise models were performed In both of the methods selected, the reference for calculation is the function of the probability to obtain the results of the sample, given the estimation for the parameters of the logistical model. Since this probability is a value less than 1 (one), the expression 2LL is common practice. Therefore, 2LL is a measure of the quality of adjustment of the estimation model applied to the data. The less -2LL, the better the quality of adjustment.

V. MAIN EMPIRICAL RESULTS

Cross-Section to income smoothing, risk and abnormal return

In the segregation of groups, we found that in general the hypotesis of research is confirmed. The results are in Table 1, including that on average, the beta of the group companies flatter were significantly lower than the group does not flatter. In a relationship of an average beta of 0.583 (zero point five hundred and eighty-three) for smoother companies and 0.913 (zero point nine hundred and thirteen) for non smoothers.

Table 1
Descritive Statistics

Type		N	Min	Max	Mean	StanDev
	β	64	0,1	1,5	0,583	0,37
Smoothers	AR %	64	-98,5	921,9	253,07	202,64
	AMAR%	64	-2,1	27,17	9,69	8,9
	β	83	-0,2	2,9	1,195	0,449
Non Smoothers	AR%	83	-222,3	448,1	136,42	222,07
	AMAR%	83	-18,64	22,09	5,36	13,34

Sources: Research data, 2008

Variables:

β: Beta

AR: Abnormal Return

AMAR: Annual Mean Abnorma Return

On the return, it was found that the abnormal return adjusted by the market of smoothers companies when annualized were significantly higher than the companies do not smooth. The abnormal return on average annualized was 9.69% for smoothers firms versus an average return of only 5.83% for the non smoothers.

The differences in the means of the groups was confirmed when subjected to parametric and non parametric tests, indicating there is a statistically significant difference in performance in the Brazilian market from those companies that have a smooth profile for non smoother. Smoother companies have systematic measures to lower risk and higher return. The results were documented in Table 2 below:

Table 2
Parametric and Non-Parametric Results

Variables	T Test				Mann-Whitney Test					
	M_0	M_1	t	Sig. (bilat.)	R_0	R_1	Mann-Whitney	Wilcoxon W	Z	Sig. (bilat.)
AR	136,4	253,1	2,848	0,025						
AMAR	5,36	9,69	2,985	0,014						
β					118,83	101,45	5201	7671	-2,432	0,01

Source: research data, 2008

Variables:

M_0: Non Smoothers Mean

M_1: Smoothers Mean

R_0: average ranking of non smoothers

R_1: average ranking of smoothers

The proof of the statistical significance of the difference in average returns between the two groups would show that a strategy of profitable trading of shares has resulted in taking a long position in companies embossed and not short on business Aliso, ensuring it an abnormal return statistically significant.

Time series for Alfa, Abnormal Return and Systematic Risk

In this section we analyze the tertiary monthly average returns of portfolios formed based on the rates of smoothing IA1 and IA2. For this you have time series of monthly abnormal returns to the achievement of contrasts. In section 3 describes the way the calculation of abnormal returns as well as the statistics of the contrast. In such pranteia section is an analysis of returns adjusted for the return required by shareholders for their level of risk estimated from the windows mobile estimation of 60 months, and the Jensen's alpha estimated for each portfolio over the period of study. Table 3 are summarized the results of this analysis in time series. The abnormal returns adjusted by the average monthly return required for their level of risk and its contrast is given by the expressions [5] and [6]. However that Jensen's alpha prove the estimation of the model [8] for each of the portfolios formed based on the rates of smoothing IA1 and IA2, and the estimation of the model [9] to the portfolio of arbitrage consistent in buying the portfolio 1 , formed by companies with clear symptoms of smoothing, and sell the discovered the wallet 4, formed by companies in which there is some evidence of smoothing.

To observe, first, the first two columns of Table 3, you can see that the average monthly abnormal return of the first two portfolios is positive, however that for the last two are negative. If it detects the portfolio 1, with an index of smoothing of 0.1250, implies a clear evidence of behavior flatter, has a higher average abnormal returns for all portfolios. If an investor had followed a consistent investment strategy to buy a monthly portfolio 1 at the beginning of each month, would have achieved on average a return of 0.41% monthly once discounted back to the required level of specific risk. On the contrary, applying this strategy of investment in the portfolio obtained in 4 would end an average return of negative 0.53% discount to the return required for their level of risk. If seeing the contrast of the p-value of significance, we see that both portfolios are below the 5% so it rejects the null hypothesis that the returns are zero. Finally, if you build a consistent strategy of arbitration in the first book to buy and sell the "discovered" at last, be obtained in terms of average excess return of 0.69% monthly, with a p-value less than 5% to which allows reject said level of significance with the null hypothesis that the return is zero.

Table 3
Test Result in Time Series

	MMAR	p-value	alfa	p-value a	beta	p-value b	R^2	N	IS
Portfolio 1	0,0041	0,0031	0,0037	0,0001	0,65	0,0000	0,92	60	0,1250
Portfolio 2	0,0034	0,0086	0,0035	0,0042	1,10	0,0000	0,93	60	0,8124
Portfolio 3	-0,0040	0,1021	-0,0041	0,1124	1,39	0,0000	0,87	60	1,9451
Portfolio 4	-0,0053	0,0312	-0,0045	0,0048	1,89	0,0000	0,91	60	12,2564
Arbitrage Portfolio	0,0069	0,0261	0,0072	0,0032	-1,24	0,0000	0,61	60	

Source: Research data, 2008

Note: RAMM´s e α´s MMAR: Monthly mean abnormal return in a Porfolio, p-value: p-value bilateral that MMAA are different from zero, alfa: the coefficient alpha estimated Jensen's alpha, p-value □: p-value adjusted for autocorrelation heteroscedasticity and in your case, the contrast of individual significance of the coefficient alpha, beta: beta estimated, □ p-value: p-value adjusted for heteroscedasticity, autocorrelation and in your case, the contrast of individual significance of beta, R2: coefficient of determination for each regression, N: number of observations, IS: index of smoothing average of each portfolio.

If you look at the Jensen alphas of other columns that appear in the table 3, once again detects the same staff of behavior that shows abnormal returns for the highest portfolio comprised of companies with clear evidence of behavior flatter front of the last book in which not there is a symptom of behavior flatter. The first two portfolios on average gain positive monthly returns, unlike the last two occurring in the opposite. Given the contrast of individual significance of the coefficient alpha estimated in the two portfolios 1, 2 and 4 can reject the null hypothesis to 5% however, is not the same portfolio in the third with a p-value of 11.24%. Regarding the systematic risk of portfolios, the estimated betas are significant in all cases and there is a list of expected behavior according to the assumptions specified in this work. This is the first book are obtained a beta of 0.65 (zero point sixty-five) that grows progressively increases as the index of smoothing average portfolio to be up to a level of 1.89 (one point eighty - nine) in the last portfolio.

The results at the portfolio are consistent with the results obtained in the methodology where cross section are obtained by a correlation between index ranges from smoothing and level of systematic risk. Ultimately, the available evidence indicates that the sample firms, with more evidence of behavior that flatter up the first and second book, have lower levels of risk to members of the latest portfolio companies for which there is no symptom of behavior flatter. Is to contrast the differences are significant risk we can see the estimation of the model [9] to the portfolio of arbitration where the estimated beta coefficient is interpreted as the differences in risk between the first and last book. In the estimation of this model to get a beta of -1.24 (minus one point twenty-four), which indicates that the first portfolio has a lower risk to the final with a p-value significant.

Income Smoothing and Size

In this section secondary, it is examining a possible link between the results of smoothing and size of business. As Proxy of size are taken for each company, the net annual operating revenue between the years 1998-2007. With these data, calculated the average and median of Proxy size companies that make the sample and whether two types of analysis are based on rates of smoothing: 1. Analysis of cross-tabulation between size and smoothing, for a sample of 244 companies filtered by smoothing index IA1. 2. Analysis of portfolio size and smoothing, for a sample of 125 companies filtered by smoothing rates IA1 and IA2.

This research is particularly relevant to see whether the size of the company influence on the propensity of the practice of smoothing results. The findings can be found in Table 1 and in tables 4 and 5. In the analysis of cross-tabulation between size and performance, it appears that small businesses are to conduct an amount significantly flatter than expected. So, as a small number of large companies, lower than expected.

			Size		
			Small	Big	Total
Behavior	Smoother	N	59	12	71
		Expected	44,5	26,5	71
		% behavior	83,1%	16,9%	100,0%
		% size	38,6%	13,2%	29,1%
	Non Smoother	N	94	79	173
		Expected	108,5	64,5	173
		% behavior	54,3%	45,7%	100,0%
		% size	61,4%	86,8%	70,9%
Total		N	153	91	244
		Expected	153	91	244
		% behavior	62,7%	37,3%	100,0%
		% size	100%	100%	100%

Sources: research data, 2008

Box 1: *Crosstabulation:* size / behavior

To improve this analysis was applied the Chi square test and Wilcoxon, to classify groups of smoothers by size, where it was possible to observe that it is actually more frequent presence of small businesses smoothers than large companies.

The results, using this methodology, surprising in that show evidence of different found in the United States and Europe. The trend of small businesses to make the smoothing more often imposes the need for formulation of new theoretical hypothesis to explain this phenomenon in Brazil. A plausible explanation is that in the context of risk associated with size - small businesses are more risky - firms adopt procedures to reduce the variability of results accounting, aimed at offsetting the risks associated with the size of the company.

Second has been practiced on an analysis of portfolio performance does not flatter and flatter and the relationship with the size of business. A contrast of bilateral null hypothesis that the average of net operating revenues in the first portfolio, which is presumed in smoothing of results, is the same as the last book in that there is no symptom of smoothing the data are found in Table 5, in this case is obtained a p-value of 0.23%. Thus, if the sample is sufficient evidence to argue that the size is significantly different for companies that smooths and firms that do not flatten, the greater the propensity to smoothing the business of smaller size. To ensure the robustness of the results at the lack of normality in the variable total assets and, at the presence of atypical observations in that variable, the median has been used as a central position of each group and has a contrast of new hypotheses zero of equal size between the groups. In this case with the Wilcoxon nonparametric test of whether you get a p-value of 3.2% which confirms the existence of statistically significant differences in size between firms and companies that do not flatten accounting results.

Table 4
Association between Income Smoothing and Size using Cross-tabulations methodology

Chi-Square Test			
	Value	gl	Sig. Bilateral
Pearson Chi-Square	17,809	1	0,000
Likelihood Ratio	19,288	1	0,000
Fischer Test			0,000
Valid Cases	244		
Wilcoxon Test			
Size - Behavior			
	N	Ranking	Sig. Bilateral	Z
Size < behavior	244	122,5	0,000	-13,54

Source: Research data, 2008

Table 5
Income Smoothing and Size

	IA	N	AT Mean	AT Median
Portfolio 1	0,1250	28	1.045.432	129.786
Portfolio 2	0,8124	32	874.567	342.751
Portfolio 3	1,9451	36	483.421	438.862
Portfolio 4	12,2564	29	355.891	532.876
		125		
Test			$\chi2$	*Wilcoxon*
Difference P-value test 1;4			0,0231	0,0320

Source: Research data, 2008

It may be noted that using this method to get a significant and positive relationship between the size of companies and smoothing of a line different from the results obtained in other works as the theoretical framework described in the second and even inconsistent with the results obtained in studies using methodology different in time to measure the smoothing as the work of Moses (1987), the methodology by which the variations in accounting methods showed that the discretionary smoothing is related to the size and is more common in large companies that small. Thus, the surprise results in this part in that show evidence of different found in the United States and France, although this phenomenon is comparable with countries of the capital markets like Spain and Portugal as the evidence is similar to results of studies of smoothing in these countries.

Ultimately, it is similar to conclusions using different methodologies, can be make a clear statement about which there is a greater propensity for the practice of smoothing results in companies of smaller size in the Brazilian market. The tendency of small companies are more likely to achieve the smoothing most often can be explained by the perception of risk associated with size, small firms are more risky, so they have the propensity to adopt procedures to reduce the variability of accounting results.

Income Smoothing and Industrial Sector

The secondary objective of this section was analyzed, descriptively, the smoothing of results in various industrial sectors that belong to companies that make up the sample. The sectoral classification used corresponds to the sectors proposed by the CVM at a depth of two digits. Table 6 can be seen describing the results of this sector.

In the first column is possible to observe the composition of the sample by industrial sectors in the two remaining is a measure of the heart rates of smoothing for each of the 17 industrial sectors represented in the sample. First it shows the average median and continued to believe that as statistics to consider this point as the presence of atypical observations

within a sector skews it. Table 6 is ordered according to the median rates of smoothing and appears in the first row of the sector "Finance and Insurance," in which financial companies are located at the head of smoothing results. The following table shows the correlations between the 17 industrial sectors that make up the sample of the study.

Table 6
Income Smoothing by Industrial Sector

	Frequence		IA mean	IA median
Finance	10	7%	0,231	0,0134
Energy	13	9%	0,351	0,2371
Food & Beverage	10	7%	0,345	0,4234
Siderur & Metalur	18	12%	0,495	0,5014
Construction	5	3%	0,782	0,8221
Eletronics	4	3%	0,891	0,8751
Industrial Machines	4	3%	0,898	0,8821
Chemicals	11	7%	1,291	1,294
Mining	3	2%	1,892	1,762
Non Metalic Mining	3	2%	2,873	2,927
Textil	18	12%	3,108	3,217
Retail	6	4%	3,318	2,964
Other sectors	18	12%	3,402	3,287
Paper & Celulose	5	3%	4,687	4,864
Oil and Gas	3	2%	5,341	5,402
Telecomunication	3	2%	6,781	6,553
Automobile	13	9%	6,89	6,641
Total	147	100%		

Factors the explain the Income Smoothing

To provide more robustness to the results was performed a logistic regression, where the group sought to classify flatter based on parameters of risk and return, and some variables to control. At this point, again, the results confirmed what had been anticipated by the previous analysis. Were used as the control variables to explain the rating company's embossed and smoothers not control the following variables: (i) volatility, (ii) Size (Sales), (iii) Abnormal Return and (iv) the Beta. In the process of improving the regression model were retained in the most relevant variables statistically.

Table 7 presents the results documented in the analysis. It appears that the volatility and size as specified in previous studies are actually explanatory variables. The advantage of logistic regression (or log) is incorporated into the study which allows a multivariate perspective, including the assessment of control of other variables that could have effect on the result. The first column of Table 7 presents indicators of the statistical-2LL that pose be used to evaluate the quality of the adjustment, the p-value of 5324 shows that do not reject the null hypothesis that the model fit the data. This column also has the values of the Pseudo-R ^{2} of Cox & Snell (0687) and Nagelkerke (0745). These figures show a model with an adequate quality of explanation of the dependent variable. The column of indicators below shows the test of the adjustment of Hosmer & Lemeshow and observed and expected values used to calculate the statistical test. As χ^2 (8) = 15093, p-value = 0097, we can conclude that the estimated values by the model are close to the observed values.

In subsequent column is the test for maximum likelihood (Omnibus test of model coefficients) between the model and no final model (model) with a p-value <0.05 (zero point zero five). Thus we can conclude that there is at least one independent variable in the final model with predictive power about our independent variable (behavior smoothing). Can be seen, in the first and second ballot of predicted, the test also shows that the sensitivity of the

predictive model with a capacity of 94.20% for non-performance 63.40% to flatter and flatter behavior. The final table of Table 7 summarizes the information on the independent variables in the model completely. According to the Wald test and p-value associated with them, the two variables that explain the behavior flatter (size and volatility) are significant at 5%.

Table 7 : Logistic Regression Results

(*) -2 Log Likelihood	P-value	Cox & Snell R Square		Nagelkerke T Square	
198,232	5,324	0,687		0,745	

Hosmer and Lameshow Test			Omnibus Test of model Coeficients			Predicted	
Qui²	df	Sig.		Qui²	df	Sig.	0	1
15,093	8	0,097	Model	96,046	2	0,000	94,20%	63,40%

Variable: Non smoother: 0 ; Smoother: 1

	B	S.E.	Wald	df	Sig.	Exp(B)	95,0% C.I.for EXP(B)	
							Lower	Upper
Volatiliity	-0,054	0,009	33,477	1	0,000	0,947	0,93	0,965
Size	-1,376	0,229	36,125	1	0,000	0,253	0,596	0,712
Constant	9,321	1,432	42,396	1	0,000	11173,353		

Source: research data, 2008

VI. CONCLUSIONS

The influence of economic and financial media along with the influence of managers, have always been present in order to show reports that are flexible take the advantage of income smoothing. There has been evidence from studies that companies nowadays reduce the cyclic nature of income. This study is no exception: it shows, in an empirical manner, that Brazilian companies make active use of income smoothing, take advantage of the flexibility this method provides, and therefore, disclose reports with artificially reduced variance.

The results reported in this study are of much importance to investors that are more risk averse when building their portfolios. These portfolios can be built from the classification of companies in Smoothing or Non-smoothing ones; smoothing companies show higher returns when compared to non-smoothing companies. It has been shown that there is a progressive lowering in adjusted returns for each level of risk, from the first portfolio to the last one. The information gathered shows strong and significative results in every Return Calculation adjusted by risk and several other factors (ex. Market portfolio),.

In sum, based on the analysis made from 1998 to 2007, empirical evidence shows that smoothing companies differentiate themselves from non-smoothing ones, in terms of risk, abnormal returns, size and economic sector. The results obtained from this study can be summarized as follows:

Hypothesis 1 **Income Smoothing and Risk**	Smoothing companies show a lower average Beta compared to non-smoothing ones.
Hypothesis 2 **Income Smoothing and Return**	The study shows that, in average, smoothing companies present a bigger annual abnormal return than non-smoothing companies. Results support the use of a portfolio strategy, were a *short* position is taken for non-smoothing companies and a *long* position for smoothing ones.
Hypothesis 3	Size is a motivational factor when deciding to implement income

Income Smoothing and Size	smoothing. Usually, smaller companies tend to implement income smoothing in a greater degree than non smoothing companies.
Hypothesis 4 Income Smoothing and Economic Sector	Energy, Finance and Insurance are Just a few examples of the Economic Sectors that use Income Smoothing.

Box 2: Results from study

When speaking of systematic risk, it has been found that the level of risk decreases along with the degree of income smoothing of the company. This applies from single level of titles to entire portfolios.

It is important to remember that this study will not be free from critic and special care has to be taken when interpreting results since there are a few limitations naturally found on the sample and techniques used. Consequently, those limitations will serve as motivation to develop more in-depth and complex studies of this subject. An interesting study would be to include companies from many different countries; this would produce stronger statistical results as well as the prolongation of the time frame to perform comparative analyses of income smoothing. All of this with the objective is this practice exists with the same intensity in other countries. In addition to this, it would be interesting to see which methods in income smoothing are used in Brazil as well as implementing new smoothing techniques.

Looking ahead in the development of this subject, some of the questions that could be addressed include:

- How can Income smoothing influence in the firm´s value.
- Explaining the difference in Normal Returns from Smoothing to Non-Smoothing companies.
- How can alternative criteria be defined for the classification of companies?
- Is there a relationship between the use of Income Smoothing and third-party cost of capital?

It is important to notice that, in this study, financial managers can find scientifically evidence that justify the use of Income Management with positive effects, sometimes known as *Benefical Smoothing*. Income Management could be understood as a way to reduce variability in results in order to reduce variability in stock price of the company. Income Smoothing symbolizes value for the market to the degree it reduces systematic risk, making it an essential tool to increase value. Since the mother goal is to increase the value of the firm, the strategy to do this is to reduce variability of income in order to increase stockholder value.

However, income smoothing can also be used negatively if applied to mask results with the intention of manipulating investor´s perceived risk. This could occur in a market specially governed by asymmetry of information and polling equilibrium. All the ideas mentioned end up in "*pernicious smooth*" as means to "mimic" other firms that have genuine smoothed results. Therefore, special care has to be taken into account prevent distorted perceptions of risk for investors.

REFERENCES

Albrecht, W.D. & Richardson, F.M. (1990). Income smoothing by economy sector. **Journal of Business Finance and Accounting**, 7 (5), Winter, 713-730.

Archibald, T.R. (1967). The return to straight-line depreciation: An analysis of a change in accounting method. **Journal of Accounting Research**, Empirical Research in Accounting, Studies 5 164-180.

Ashari, N., Koh, H.C., Tan, S.L. & Wong, W.H. (1994). Factors affecting income smoothing among listed companies in Singapore. **Accounting and Business Research**, 24 (96), 291-301.

Bao e Bao (2004). Income smoothing, earnings quality and firm valuation. **Journal of Business Finance and Accounting,** 31. Nov – Dez 2004.

Bhat, V.N. (1996). Banks and income smoothing: An empirical analysis. **Applied Financial Economics**, 6 (6), December, 505-510.

Bin, K Wan Bt e Kamil K (2000). Market perception of income smoothing practices: malaysian evidence. **Journal of Economics and Finance**, 26 (2), Spring, 132-146.

Booth, G.G., Kallunki, J.P. & Martikainen, T. (1996). Post-announcement drift and income smoothing: Finnish evidence. **Journal of Business Finance and Accounting**, 23 (8), Oct, 1197-1211.

Buckmaster, Dale (2001). Development of Income Smoothing Literature 1893-1998: A focus on the United States. **Studies in the Development of Accounting.**

Carlson, S.J. & Bathala, C.T. (1997). Ownership differences and firms' income smoothing behaviour. **Journal of Business Finance and Accounting**, 24 (2), March, 179-196.

Chalayer, S. (1994). Identification et motivations des pratiques de lissage dês résultats comptables des entreprises françaises cotées en Bourse. Tese de Doutoramento em Ciências de Gestão, Universidade de Saint-Etienne.

Chaney, P.K. & Lewis, C.M. (1995). Earnings management and firm valuation under asymmetric information**. Journal of Corporate Finance**, 319-345.

Chaney, P.K. & Lewis, C.M. (1998). Income smoothing and underperformance in initial public offerings. **Journal of Corporate Finance**, 4, 1-29.

Copeland, R.M. (1968). Income smoothing. Journal of Accounting Research, **Empirical Research in Accounting**, Selected Studies 6 (Supplement), 101-116.

Craig, R. & Walsh, P. (1989). Adjustments for 'extraordinary items' in smoothing reported profits of listed Australian companies: Some empirical evidence. **Journal of Business Finance and Accounting**, 16 (2), Spring, 229-245.

Eckel, N. (1981). The income smoothing hypothesis revisited. **Abacus,** 17 (1), 28-40.

Gibbins, M., Richardson, A. & Waterhouse, J. (1990). The management of corporate financial disclosure: Opportunism, ritualism, policies, and process. **Journal of Accounting Research**, 28, Spring, 121-143.

Graham, Harvey, e Rajgopal (2005), The economic implication of corporate financial reporting, **Journal of Accounting and Economics**, 40, 1-3 (December)

Grant, Markarian e Parbonetti (2007). CEO Risk-Related Incentives and Income Smoothing. **SSRN.com/abstract=975266**

Iñiguez, R. & Poveda, F. (2004). Long-run abnormal returns and income smoothing in the spanish stock market. **European Accounting Review**, 13 (1), 105-130.

Lev, B. & Kunitzky, S. (1974). On the association between smoothing measures and the risk of common stocks. **The Accounting Review**, 49 (2), April, 259-270.

Michelson, S.E., Jordan-Wagner, J. & Wootton, C.W. (1995). A market based analysis of income smoothing**. Journal of Business Finance and Accounting**, 22 (8), December, 1179-1193.

Michelson, S.E., Jordan-Wagner, J. & Wootton, C.W. (1999). The relationship between the smoothing of reported income and risk-adjusted returns. **Journal of Economics and Finance,** 24 (2), 141-159.

Michelson, Jordan-Wagner e Wooton (2001). Accounting income smoothing and stockholder wealth. **Journal of Applied Business Research**, 10 (3), Summer, 96-110.

Moses, O.D. (1987). Income smoothing and incentives: Empirical tests using accounting changes. **The Accounting Review**, 62 (2), April, 358-377.

Mulford Charles. e Comiskey Eugene. (2002). **The financial numbers game. Detecting creative accounting practices.** Jonh Wiley & Sons Inc.

Ronen, J. & Sadan, S. (1981). Smoothing income numbers: Objectives, means, and implications. Massachusetts: Addison-Wesley Publishing Company, Reading.

Ronen e Yaari (2007). Legal insider trading, CEO´s incentive, and quality of earnings. **Corporate Governance and Control**, Spring : 210-219

Smith, E.D. (1976). The effect of the separation of ownership from control on accounting policy decisions. **The Accounting Review,** 51 (4), October, 707-723.

Tan e Jamal (2006). Effects of Accounting Discretion on abilitu of managers to smooth earnings. **Journal of Accounting and Public Policy**, 25,5 (September- October) 554-573

Trueman, B. & Titman, S. (1988). An explanation for accounting income smoothing. **Journal of Accounting Research**, 26 (Supplement), 127-139.

Tucker e Zarowin (2006). Does income smoothing improve earnings informativeness. **The Accounting Review**. Jan. 2006, 86,1 Pág. 251.