Disclosure of Small Profits by BM&FBOVESPA
Stock Exchange Listed Companies

Roberto Frota Decourt¹, José Pietro Neto², Jean Carlos Oliveira Seidler³ e
Thaís Daneberg⁴

RESUMO
O presente estudo teve como objetivo verificar a modalidade da distribuição da curva normal
para os retornos das ações das empresas listadas na BM&FBOVESPA, a fim de buscar
evidências de gerenciamento de resultados nas demonstrações financeiras entre 1995 e 2012.
Embora pequenos lucros ou perdas sejam apenas superficialmente diferentes nas lógicas
racionais, a diferença entre indicar lucro e perda, psicologicamente, pode ser significativa.
Dessa forma, as empresas evitariam divulgar pequenas perdas, alterando-as para lucros. O
método utilizado embasou-se no trabalho de Burgstahler e Dichev (1997), em que os
histogramas de lucros foram analisados quanto à frequência das pequenas relações negativas e
positivas das variações patrimoniais. Os resultados enfatizaram a prática de gerenciamento de
resultados de forma mais consistente entre 1995 e 2012, mas essa indesejada prática vem se
reduzindo no Brasil.

Palavras-chave: Gerenciamento de resultados; Accruals discrecionários; Distribuição de
frequência.

ABSTRACT
The present study sought to verify the normal curve distribution modality for returns on equities
from companies listed on the BM&FBOVESPA Stock Exchange in order to search for evidence
of earnings management in financial statements from 1995 to 2012. Although small profits or
losses have a slightly different in rational logic, the difference between declared profit and loss
can be significant psychologically. In this way, companies would avoid reporting small losses,
thus transforming them into profits. The method used was based on the work of Burgstahler
and Dichev (1997), in which profits histograms were analyzed for the frequency of small
negative and positive relations in equity variations. The results emphasized the practice of

¹ Universidade do Vale do Rio dos Sinos (Unisinos), Rio Grande do Sul, Brasil.
E-mail: rfddecourt@unisinos.br http://orcid.org/0000-0002-9419-498X
² Universidade Federal de Santa Maria (UFSM), Rio Grande do Sul, Brasil.
E-mail: jpietron@gmail.com http://orcid.org/0000-0002-8697-9496
³ Universidade do Vale do Rio dos Sinos (Unisinos), Rio Grande do Sul, Brasil.
E-mail: seidler.jean@gmail.com http://orcid.org/0000-0001-6383-2769
⁴ Universidade do Vale do Rio dos Sinos (Unisinos), Rio Grande do Sul, Brasil.
E-mail: tdaneberg@yahoo.com.br http://orcid.org/0000-0001-5512-8165
results management more consistently between 1995 and 2012, nevertheless this undesirable practice has been declining in Brazil.

**Keywords:** Earnings management; discretionary accruals; Frequency distribution.

1 INTRODUCTION

Disclosure and transparency in the relationship between company and shareholder are being increasingly appreciated on the financial market. Encouraged by BM&FBOVESPA, corporate governance in Brazil drove companies to commit themselves, *inter alia*, to disclosing financial statements with a higher transparency standard so that accounting information is given priority and more investments are attracted to business.

Due to this scenario, investors are more interested in the stock market, but they retreat for a variety of reasons—sometimes because of political and economic uncertainty but mainly because of the lack of reliable and transparent information about investment opportunities.

There is a lack of information that can be produced by elements of subjectivity in the financial results reported by companies through creative accounting, see Kraemer (2008); Milesi-Ferretti (2004); Matsumoto and Parreira (2009). Although derived from standardized and regulated statements, the results reported are not exact and are not the sole assessments of company performance.

On the contrary, the results may differ from actual values, given the adjustments that can be made. These arguments suggest that profit or loss, for example, cannot be a consequence of company operations and management only but also a combination of earnings management and managers' actions.

Multiple accounting choices regarding measurement and disclosure allow managers to adopt the adjustments they consider necessary in context, provided that they follow the generally accepted accounting principles, which are dictated in CFC Resolution No. 1282/10 and supported by law (in the case of corporations, Law 6.404/76 updated by Laws 10.303/01, 11.638/07 and 11.941/09) and by accounting protocols issued by the Accounting Standards Committee.

Result management consists in the use of legal adjustments to direct the information to be disclosed according to the managers’ intention to increase or decrease the outcomes of certain values that will be revealed. In this way, if companies do not follow a pattern of adjustments in their financial reports, the results become a convenient model to managers, and doubts about the real situation of the company may arise among investors.

Therefore as sustained in the current legislation, the legal accounting adjustments signal to the possibility that a fiscal situation can be disclosed, under accounting principles, in different ways. The disclosure of reports, which do not correspond to the actual situation, can affect the result assessment report produced by analysts.

The bias in the image data reviewed is passed through the cycle of analysis of financial statements, and its interpretation and evaluation will contain proportional loopholes in the changes made and embedded in the reporting process.

In this context, the error in the procedure for assessing the value of the company's assets is questionable, since shareholders and managers have unconnected sources of information due to the subjectivity of some accounting procedures involved in report preparation. The reports are the fundamental key source of data for the production of information by analysts. Martinez (2001) suggests that Brazilian firms indicate bad behavior however there are no present statistical tests to validate the problems in the distribution data found.
In this sense, this research seeks to find significant evidence on earnings management as did Martinez (2001) between 1995-1999 years, with updated results between 1995-2012 in an attempt to verify if earnings management is still practiced in more recent years by Brazilian firms.

This study is justified as a helpful tool for investors and meets the scope of corporate governance, which provides greater transparency in the dissemination of information and ethics.

The rest of the paper is organized as follows: a literature review on earnings management is provided in section 2; the methodology used to identify the practice of earnings management is described in section 3; results and discussion are reported in section 4, and a conclusion is given in section 5.

2 THEORETICAL REFERENCE

Healy and Wahlen (1999) define earnings management as the use of judgment, by the managers, in financial reporting, and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.

Schipper (1989) presents earnings management as an intervention in the process of reporting financial data in order to obtain some private gain. For Martinez (2001), earnings management is not a kind of accounting fraud. That is, it operates within limits prescribed by the accounting legislation. However, managers perform their choices, not on the basis of what is the company’s actual financial situation but rather to align with particular motivations and artificially create results with explicit purposes, which do not express the company’s actual financial situation.

Mulford and Comiskey (2002) define earnings management as the active manipulation of earnings toward a predetermined target. This target may be one set by management, a forecast made by analysts, or an amount that is consistent with a smoother, more sustainable earnings stream.

Sutrisno (2017) considers that the earnings management at the first moment, can result in advantages; however, it can also cause several negative impacts on the company’s operational performance in the future.

Beneish (2001) argues that earnings management is a type of fraud and supports his point of view using the definition of fraud from the National Association of Certified Fraud Examiners, which is “one or more intentional actions made to deceive others and cause them financial losses.”

Dechow and Skinner (1996) distinguish earnings management from fraud since the first is practiced under GAAP while the latter is committed in violation of the GAAP. For Martinez (2013), managers mainly decide to perform earnings management in an attempt to influence capital market perception or reduce earnings volatility.

As we can see, there is no general agreement about whether earnings management constitutes fraud. However, it is clear that the practice is undesirable to investors because it hides the company’s actual scenario. Srour (1998) believes that current entrepreneurs and managers have to face on a daily basis the old challenge of Glaucon, brother of Plato: "If a person can lie, cheat and steal, and never be caught, why should they be honest?"

Whether it is fraud or not, whether it is performed under the accounting principles or not, whether it may be discovered or not, the administrator of a company is required to disclose
results to its shareholders in the most transparent manner. Therefore, there is agreement on one aspect: earnings management is a manipulation of data in order to meet the administrators’ interests, and not the shareholders’ in general, so it is a highly deprecated activity.

Burgstahler and Dichev (1997) identified that earnings management performed in order to avoid annual losses or a decrease in profits is common. They estimated that administrators of 30% to 44% of small companies with negative results had taken actions to transform these results into a positive one. They also estimated that 8% to 12% of companies with a slight decrease in results made some changes in the results in order to cause a small positive variation.

\[\text{Figure 1. Earnings histogram from Burgstahler and Dichev’s observations (1997)}\]

Figure 1 is the histogram shown in Burgstahler and Dichev’s research (1997) representing the frequency of 75,999 returns observed between 1976 and 1994, and it is the focus of analysis regarding evidence on the existence of earnings management in order to avoid the disclosure of small losses to the market. The histogram clearly shows a high frequency of very low positive returns and a low frequency of negative returns, near zero. According to the authors, this indicates that companies usually practice earnings management to eliminate losses when they are small.

Research similar to that of Burgstahler and Dichev (1997) was conducted in other countries, where evidence of earnings management focused on shadowing small losses was also found. Schøler (2005) in Denmark; Beuselinck, Deloof and Manigart (2009) in Belgium; Suda and Shuto (2005) in Japan; and Glaum, Lichtblau, and Lindemann (2004) in Germany conducted some of these studies. In Brazil, Martinez (2001) conducted a study analyzing the distribution of net income in relation to the total assets of Brazilian public companies from 1995 to 1999. The results are illustrated in Figure 2.
Martinez (2001) did not conduct a statistical analysis of these data to prove whether the differences were significant. However, an excessive increase in small positive returns can be seen in Brazil, which is evidence of the performance of earnings management to prevent the disclosure of small losses. This outcome is consistent with those found in other countries. In the Prospect Theory, Kahneman and Tversky (1979) showed that gains and losses are evaluated differently, and they propose a value function for gains and losses as shown in Figure 3.

Kahneman and Tversky’s value function (1979) is obtained from the deviations from a reference point, which in this case is zero, where there is no gain or loss. It is generally concave for gains and convex for losses and steeper for losses than for gains.

The interpretation of the value function leads to the conclusion that the pleasure obtained for a given gain is smaller than the pain the individual feels when losing the same value. These differences involving gains and losses identified by Kahneman and Tversky (1979) can justify managers' efforts to prevent the disclosure of negative outcomes and manage the results to turn them into positive ones.

Thaler (1999) considers the evidence that companies practice earnings management to avoid disclosing small losses is an indication that companies believe that shareholders and potential shareholders react to the disclosure of results in a manner consistent with the Prospect Theory.
In this manner, shares of companies with small losses would have a harsher penalty than shares in companies with small profits. A rational analysis of the results would not differentiate a minor loss from a small profit since in both cases the company would be below the desired average.

3 METHOD

The objective of this study was to verify whether public companies holding shares traded in BM&FBOVESPA practiced the management of accounting earnings. The sample was extracted from the *Economática* software and consisted of all companies with available equity data from 1995 to 2012.

Companies with negative equity were excluded from the sample. This period was chosen because it is long enough and has inflation indexes already considered stable, contributing to obtaining robust results that are free of distortions caused by excessive inflation of the previous periods.

The data were jointly analyzed in an analysis of 18 years and subsequently divided by year, resulting in 18 new samples. The sample had 6,198 cases in the period analyzed, distributed as shown in Table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Number of companies analyzed per year</th>
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<tbody>
<tr>
<td>Cases</td>
<td>281</td>
</tr>
<tr>
<td>Period</td>
<td>2005</td>
</tr>
<tr>
<td>Cases</td>
<td>330</td>
</tr>
</tbody>
</table>

The frequency distribution methodology used by Burgstahler and Dichev (1997) and Martinez (2001) was adopted. Then the frequency distributions of the relations between profits and losses reported as company equity were analyzed. As a statistical significance test, the t-statistic described by DeGeorge, Patel, and Zeckhauser (1999) was used, which tests the discontinuity of an empirical distribution. This model assumes that the probability density differences between two close short intervals of the histogram follow an approximately normal distribution.

The histograms were divided into bands of every 2%, and for the purposes of this research, losses of up to 2% of the declared equity were considered small losses while small profits were considered as gains of up to 2% of the equity.

Therefore, if there was no earnings management, the number of small profits of the total sample should be close to the number of small losses. For the annual samples, the number of years in which small profits were higher than the frequency of small losses should be close to the number of years in which the frequency of small losses was higher than small profits. We observed the ratio between small profits and small losses for each year. This number should be close 1.

Assuming that the differences in the probability density between two neighboring intervals near a histogram follow an approximately normal distribution, the following statistical test, \( \tau \), developed by DeGeorge, Patel and Zeckhauser (1999), which extrapolates from neighborhood densities to compute expected density at the threshold assuming there was no unusual behavior in capturing statistical differences:
\[ \tau_n = \frac{\Delta p_n - MED(\Delta p_i)}{DP(\Delta p_i)} \]

Where,
- \( \Delta p_n \) = probability density of the interval \( n \) minus the probability density of the neighboring \( n - 1 \).
- \( MED(\Delta p_i) \) = average of \( \Delta p_i \).
- \( DP(\Delta p_i) \) = standard deviation of \( \Delta p_i \).

\( MED(\Delta p_i) \) and \( SD(\Delta p_i) \) were estimated as the averages and the standard deviations of all the density probabilities of intervals between two neighboring \( n-5 \) and \( n+5 \), excluding the difference \( n - (n-1) \), using the log (\( \Delta p_i \)) according to the procedure of DeGeorge, Patel and Zeckhauser (1999).

The distribution of \( \tau \) is likely to be well approximated by the Student’s t-distribution under \( H_0 \). The distribution format of Student’s t depends on the number of degrees of freedom. The greater the number of degrees of freedom, the more "concentrated" the distribution is. For very large values of degrees of freedom, Student’s t distribution approaches the normal distribution. It is noteworthy that the above test approximately follows a t-Student distribution, and that the decision-making levels were 1%; 5% and 10%.

The hypotheses tested were:
- \( H_0 \): The financial statements available to investors in the companies listed on BM&FBOVESPA are not affected by earnings management.
- \( H_1 \): The financial statements available to investors of the companies that hold shares in BM&FBOVESPA are affected by earnings management.

The analysis will be done by year and also by the group of years to identify if the earnings management practice is persistent in more recent years.

4 RESULTS

4.1 Presentation of Results

The results are shown in Figures 4 to 22. The gain and loss area is divided by a vertical line. It is noticeable that in the histograms of the frequency distributions of the relations between reported profit and loss, none of the 18 periods analyzed showed an average of the small loss, which was higher than that of small profits.

**Figure 4.** Results in 1995  
**Figure 5.** Results in 1996
Figure 6. Results in 1997

Figure 7. Results in 1998

Figure 8. Results in 1999

Figure 9. Results in 2000
Figure 10. Results in 2001
Figure 12. Results in 2003
Figure 14. Results in 2005
Figure 11. Results in 2002
Figure 13. Results in 2004
Figure 15. Results in 2006
Figure 16. Results in 2007
Figure 17. Results in 2008
The ratio between the occurrences of small profits and small losses are presented in Table 2. Considering the whole sample, the number of occurrences with a small profit is almost
double the cases with a small loss, with the largest difference in 1999 and the smallest one in 2008.

Table 2

<table>
<thead>
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<tbody>
<tr>
<td>Ratio</td>
<td>2.90</td>
<td>2.00</td>
<td>2.46</td>
<td>1.59</td>
<td>3.00</td>
<td>1.88</td>
<td>1.54</td>
<td>1.42</td>
<td>2.14</td>
<td>2.71</td>
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<td>Test τ</td>
<td>2.735***</td>
<td>1.782*</td>
<td>2.604***</td>
<td>1.676*</td>
<td>2.891**</td>
<td>2.035**</td>
<td>1.439</td>
<td>1.392</td>
<td>1.780*</td>
<td>2.433**</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Period</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>in all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>1.09</td>
<td>2.00</td>
<td>1.33</td>
<td>1.00</td>
<td>2.90</td>
<td>1.15</td>
<td>1.15</td>
<td>1.29</td>
<td>1.81</td>
</tr>
<tr>
<td>Test τ</td>
<td>1.037</td>
<td>1.723*</td>
<td>1.237</td>
<td>1.045</td>
<td>2.779***</td>
<td>1.093</td>
<td>1.596</td>
<td>1.119</td>
<td>2.885***</td>
</tr>
</tbody>
</table>

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively

Table 2 shows that there was a higher concentration of positive results near zero in relation to the negative results also near zero in every year, suggesting that some companies managed their results in order to prevent the disclosure of damage, perhaps in order to maintain the value of the shares at the desired level.

4.2 Discussion of Results

These values clearly demonstrate that there was a statistically significant difference between the frequencies of small profits and small losses. We found 401 small profits and 221 small losses. The proportion of them is 1.81 and statistical significance at the 1% level. But it is not only important to analyze all the samples, it is interesting to verify the evolution of these differences. The disclosure of small losses was greater than the disclosure of small profits in 17 of the 18 analyzed years. In only 2009, the number of small losses was the same as small profits.

However, if analyzed the evolution of these differences it is possible to identify that they used to be greater before 2001 and smaller after 2007. This tendency can be observed in Figure 23. The slope of the regression line is negative and the coefficient is significant at the 10% level (p-value = 0.0521).
If the ratio is analyzed not by year, but by the group of years, a declining trend in the practice of earnings management is still more evident. Six groups of three years each were created. As shown in Figure 24, the $R^2$ is still very high (0.8208), the slope is -18.75% for 3 years, consistent with the previous value of -5.8% for one year. Despite the small number of groups (n=6), the coefficient -0.1875 is significant at 5% level (p-value= 0.0128).

When some years are grouped there is the loss in the size of the sample (from 18 to 6), but on the other hand there is the gain in increasing the number of occurrences of small losses or profits in each group, which reduces the variability of the sample that is a consequence of the law of small numbers (Tversky and Kahneman, 1971). This gain results in the increase of the $R^2$ from 0.2159 to 0.8208.

![Figure 24. Ratio between the disclosure of small profits and small losses along time by 6 groups](image)

The practice of earnings management is maleficent for the stock market and it used to be a known procedure in Brazil. Martinez (2001) has demonstrated that Brazilian firms practice earnings management during 1995 up to 1999 and this research confirms these results, however, after 2001 this bad behavior begins to fall, and this tendency is identified from 2001 until 2012.

In 1999, the Brazilian Institute of Corporate Governance (IBGC) launched the Code of Best Practices of Corporate Governance that could have influenced the improvement of disclosure from Brazilian companies that results in the reduction of earnings management identified in this study.

The Enron and Worldcom and others accounting scandals that occurred between 2000-2002 took investors to demand more disclosure from companies. US lawmakers moved fast and approved Sarbanes-Oxley Act (SOX) that contribute to better financial reports from companies. Although this is an USA Law, what happens in the USA can influence firms and investors around the world. Companies from all world issues ADRs in the USA and these companies are subject to SOX.

Greater participation from foreign investors may be one of the determinants in the reduction of earnings management in Brazil. Kim et al. (2016) identified that these kinds of investors favors the reduction of earnings management.

This is good news for Brazilian investors and Brazilian firms since a market with better result disclosure practices gains investor confidence and this should result in smaller capital costs.
5 CONCLUSION

The present research tested the methodology from Burgstahler and Dichev (1997) and Martinez (2001) for companies that hold shares on the BM&Bovespa during the years 1995 to 2012 and was aimed at verifying whether these companies were still practicing a channeling of financial results for their own benefit.

The evidence indicates that the number of companies that practice earnings management in order to avoid the disclosure of losses has been falling over time, considering the low frequency of slightly negative results and the high frequency of results slightly higher than zero regarding equity variation. The results were statistically significant and confirmed by 3 different ways of grouping the periods of analysis.

Although this practice is not consistent with the principles of transparency desired by investors and regulators, it is scientifically supported by the Prospect Theory of Kahneman and Tversky (1979) and by its value function, which recommends the practice of earnings management to avoid the disclosure of small losses. It seems that executives from Brazilian firms are starting to avoid this maleficent practice and are acting more according to the good principles of transparency that in the long-term should increase company values as capital costs decrease.

The null hypothesis that financial statements were free from earnings management was rejected during the period from 1995 up to 2001, and the results suggest that the companies analyzed do carry out this practice, which is also performed in several countries. However, the null hypothesis could not be confirmed for more recent years, a period in which investors and legislators began to demand greater company transparency and initiatives such as the Code of Best Practices of Corporate Governance of the IBGC were born.

Following this study, the authors recommend a study comparing the performance of company shares after the statement of small losses in relation to company stock market performance, as this usually reports large losses in order to verify if the market really values market shares of companies that divulge large equity losses.

In this manner, these results will surely contribute to the development of a financial literature about companies traded on the stock market and increases investor’s knowledge to carry out their analysis of the securities they trade.

Another suggestion for future studies is to identify the profiles of companies that favor the practice of earnings management and as a last suggestion, verify what led to the trend in reducing the practice of earnings management. This could be the consequence of the IFRS adoption or a higher level of demand from investors as they no longer accept such practices or there is a correlation between the level of economic activity and growth in the country.

REFERENCES


