EARNINGS MANAGEMENT TO ACHIEVE BENCHMARK TARGETS: A CASE OF SERBIAN LISTED COMPANIES

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ABSTRACT

The aim of this study is to investigate whether and how Serbian companies manage earnings to avoid losses and to avoid earnings decreases. The empirical evidence found in this study shows that there is a discontinuity in the distribution of reported earnings around the zero earnings benchmark suggesting that Serbian companies engage in earnings management to avoid reporting losses. Furthermore, this continuity disappears when we subtracted discretionary accruals from reported earnings indicating that Serbian companies use discretionary accruals as a tool for earnings management. However, the distribution of earnings does not provide evidence that Serbian companies manage earnings to avoid earnings decreases. These results are robust to alternative methods of scaling earnings and various ways of estimating discretionary accruals.

Keywords: Earnings Management. Earnings Benchmark. Earnings Distribution. Discretionary Accruals.

1 INTRODUCTION

It has been argued that market reword firms that report positive earnings sustain last year's performance or meet analyst reward while it reacts negatively to firms that miss these three benchmarks. Consequently, achieving these benchmarks creates incentives for executive managers to manipulate earnings (Bartov et al. 2002; Brown & Caylor 2005; Degeorge et al. 1999; Habib & Hossain 2008; Kasznik & McNichols 2002; Lopez &and Rees 2002). Achieving these benchmarks is of particular interest to managers because entities involved with the firm such as investors, banks and shareholders consider them important as well (Burgstahler & Dichev 1997). Degeorge et al. (1999) assert that executives manipulate reported earnings to influence the perceptions of outsiders such as investors, banks, and suppliers about the firm's underlying financial performance, and to gain personal satisfaction from making a target. Likewise, stakeholders utilize these benchmarks as reference points to assess and reward managers.

Benchmark-driven earnings management happen when managers opportunistically use the judgment and estimates allowed by accounting standards (e.g., depreciation, allowances for doubtful debt and inventory allowances and consumption) or structure transaction (e.g., changing production volume to influence costs of goods sold or timing the sales of fixed asset and investment) so as to alter financial reports either to mislead users of accounting information about the firm's underlying financial performance or to gain some private benefits (Healy & Wahlen 1999; Stlowy & Breton 2004). Regardless the method that firms use or the incentives behind the opportunistic earnings management behavior, it has negative consequences on the firms future performance (Degeorge et al. 1999), usefulness of financial reports, shareholders, employees, the communities in which firms work and society at large (Prior 2007; Rasheed et al. 2005). However, it is of paramount importance to find the exact line of distinction between earnings management practices and financial reporting fraud, although nothing written provides any one acceptable framework to differentiate between the two (Marai & Pavlović 2013). In recent years, threshold-oriented earnings management has received significant attention in accounting literature. However, most of these studies focus more on developed economies with strong legal institutions and well-developed financial markets. In addition, the findings of studies that investigated prevalence of threshold-oriented earnings management in an international context indicate differences in earnings management practice on a country level. These differences exist because of the fact that manager's ability of manipulating reported earnings is influenced by institutional factors such as investor protection, legal enforcement and culture. For example, Leuz et al. (2003) study of earnings management across 30 countries found that earnings management is relatively low in countries with high outside investor protection, and widespread in high uncertainty-avoidance countries. These results are confirmed by Nabar and Boonlert-U-Thai (2007) who also use a sample of 30 countries and conclude that since discretion and smoothing are influenced by different factors, researchers should be cautious when combining these diverse reporting behaviors into an overall earnings management measure (Glaum et al. 2004; Shen & Chih 2005; Burgstahler et al. 2006; Doupnik 2008; Han et al. 2010).

In the context of Serbia, researchers have not shown strong interest in obtaining the empirical results to support the application of earnings management in business practice of Serbian companies. The accounting profession confirmed that application of creative accounting is present in business of economic entities in the Republic of Serbia to a significant degree (Knežević et al. 2012). Therefore, the aim of this study is to investigate whether and how Serbian companies manage earnings to avoid losses and to avoid decreases in earning to sustain last year's performance. To achieve this goal first, study builds on the earlier work by

Burgstahler and Dichev (1997) and Degeorge et al. (1999) to investigate whether Serbian companies manage earnings to avoid reporting losses and decreases in earnings. Second, similar to Gore et al. (2007), to investigate how these firms manage earnings, study estimates discretionary accruals to capture the magnitude of earnings management. Then study calculates pre-managed earnings by excluding the discretionary accruals from reported earnings. The empirical evidence found in this study shows that there is a discontinuity in the distribution of reported earnings around zero earnings benchmark suggesting that Serbian companies engage in earnings management to avoid reporting losses. Furthermore, this continuity disappears when discretionary accruals were subtracted from reporting earnings indicating that Serbian companies use discretionary accruals as a tool for earnings management. However, the distribution of earnings does not provide evidence that Serbian companies manage earnings to avoid earnings decreases.

The importance of the results of this study is twofold. Firstly, it is the first study to investigate earnings management in the Serbian context which differs from that in previous literature, for example, in terms of firm size and institutional setting. Therefore, It aspires to contribute to our understanding and knowledge on the issue related to earnings management. Secondly, it is expected that the study's findings will assist stock market participants to evaluate the quality of firms' reports. In addition, they are expected to assist regulators to improve disclosure requirements. The rest of this study is structured as follows. Section 2 provides a literature review of relevant studies. Section 3 represents the study hypothesis. Section 4 outlines the methodology and research design issues, while section 5 describes the sampling and data collection. Section 6 reports the results and discusses them, while further analysis and robustness tests are presented in section 7. In the final section, the main conclusion of the study is provided.

2 LITERATURE REVIEW

Investigating whether, how and why firms manage earnings to just meet or exceed certain benchmarks has been of great concern for researches especially in developed countries. However, owing to the fact that earnings management practices cannot be observed directly, as well as the numerous methods management adopt in its application, identification is problematic (Marai & Pavlović 2014). Burgstahler and Dichev (1997) provide the first cross-sectional distribution approach to investigate threshold-oriented earnings management using a sample of US companies. This approach is based on two main steps; the first one is identifying certain thresholds that would motivate managers to manage earnings. These are to avoid reporting loss and earnings decreases. The second step is testing the assumption that existence of earnings management to achieve these targets will cause discontinuity in cross-sectional distributions of earnings and earnings. That is this distribution will take a shape of remarkably low frequencies of small negative reported earnings and unusually high frequencies of small positive reported earnings. Likewise, earnings management to report earnings decrease will take the shape of unusually low frequencies of small earnings decrease and unusually high frequencies of small earnings increase. Burgstahler and Dichev (1997) find that discretionary accruals components of earnings and cash flow are managed to increase reported earnings.

Similarly, using a sample of US companies Degeorge et al. (1999) and Dechow et al. (2000) observe discontinuities in earnings distribution that indicate earnings management motivated by threshold; report positive profits, sustain recent performance and meet analysis' expectations. Dechow et al. (2000) assert that these firms want to avoid disappointing analysts since they are most likely to suffer from the "torpedo effect": small earnings disappointments lead to large stock price declines. In an Australian context, Holland and Ramsay (2003)

examine the distribution of reported earnings around two benchmarks (zero earnings and sustaining last year's performance). Generally, they find significant discontinuities in the distribution of reported earnings and changes in earnings in the form of significantly more small earnings increases and small profits than expected and considerably fewer small earnings decreases and small losses than expected. Following Burgstahler and Dichev (1997), Glaum et al. (2004) provide evidence on earnings management in order to avoid losses, decreases in earnings, and earnings below the forecasts of analysts in the U.S. and Germany. However, the results indicate that there are not statistically significant differences between the extent of earnings management to avoid losses and earnings decreases in the U.S. and in Germany. By contrast, earnings management in order to avoid negative earnings surprises appears to be more prevalent in the U.S. than in Germany. Some recent studies apply Burgstahler and Dichev (1997) methodology in emerging stock market and such as Amar and Abaoub (2010) find that Tunisian companies manage earnings to avoid losses and earnings decreases rather than to avoid negative earnings surprises. El-Sayed Ebaid (2012) documents that there is a discontinuity in the distribution of reported earnings and earnings changes around zero benchmark suggesting that Egyptian listed firms tend to engage in earnings management to avoid reporting losses and avoid reporting earnings decreases.

Regarding how earnings management is conducted, academic research has examined the mechanisms that managers use to achieve earnings benchmarks. Generally, firms are found to use both accrual earnings management and real earnings management to beat or meet earnings targets. Matsumoto (2002) finds evidence that firms use abnormal accruals as mechanism to manage earnings upward or to guide earnings forecast downward to meet or exceed analysis' forecast. Burgstahler and Eames (2006) provide distributional evidence that managers consistently use both discretionary accruals and operating cash flow to increase reported earning to meet or slightly beat analysts' forecasts if pre-managed earnings are below market expectations. Ayers et al. (2006) find that the discretionary accruals are positively related to achieving the profit and earnings change benchmarks throughout the earnings distribution. Gore et al. (2007) indicate that the earnings levels, changes and surprises of UK firms, like those of US firms, distributed discontinuously around zero. However, non-discretionary earnings levels, changes and surprises for the same sample are distributed without this discontinuity at zero, suggesting that the discontinuity in the earnings distribution is attributable to discretionary accrual. Caylor (2010) find that firms use both deferred revenue and accounts receivable to manage earnings in an attempt to avoid negative earnings surprises but little evidence that either are managed to avoid losses or earnings decreases. Jackson and Liu (2010) find that firms manage bad debt expense downward (and even record income-increasing bad debt expense) to meet or beat analysts' earnings forecasts. Regarding real earnings management, Roychowdhury (2003) finds evidence suggesting that firms engaging in real activities manipulation, such as reducing discretionary expenses, giving price discounts to boost sales temporarily, or by overproduction to meet analysts' forecasts. Gunny (2010) indicates that firms practicing real activity manipulating such as (reducing research and development to increase income, reducing selling, general, and administrative expenses to increase income, cutting prices to boost sales in the current period, and ⁄ or overproducing to decrease cost of goods sold) is positively associated with firms just meeting earnings benchmarks. Chapman and Steenburgh (2011) confirm managers' stated willingness to sacrifice long-term value in order to smooth earnings and their stated preference to use real actions to boost earnings to meet different types of earnings benchmarks.

However, some previous studies question the assumption that earnings management behavior can be completely explained by the discontinuity of the earnings distribution. For instance, Dechow et al. (2003) do not find an association between discretionary operating

accruals and the earnings discontinuity. Durtschi and Easton (2005) find that the shapes of the frequency distributions of reported earnings reflect deflation, sample selection, and a difference between the characteristics of profit and loss observations (such as market pricing and analyst optimism/pessimism). Therefore, these factors must be considered before using the shapes of these distributions (around zero) as evidence of earnings management. The same results confirmed by Beaver et al. (2007) and Durtschi and Easton (2009) who indicate that researchers should take evidence beyond the mere shapes of distribution and use caution in interpreting a discontinuity in the distribution of net income as evidence of earnings management.

Taken together, findings of previous literature seem to imply that earnings tend to be managed toward certain benchmarks such as reporting positive earnings, avoiding loss and meeting analysts' expectations. Such behavior is likely to be reflected in a discontinuity in cross-sectional distributions of earnings and earnings changes. That is, the distribution takes a form of unusually low frequencies of negative small earnings and unusually high frequencies of positive small earnings. Similarly, management to earnings decrease will be reflected in the form of unusual low frequencies of small earnings decrease and unusually high frequencies of small earnings increase. However, this discontinuity is not necessarily to be taken as evidence of earnings management unless linked to the mechanisms that are available for managers to use for altering reported earnings.

3 HYPOTHESIS DEVELOPMENT

In this paper, it was firstly examined whether earnings and earnings changes are distributed with a discontinuity at zero earnings and earnings changes, similar to Burgstahler and Dichev (1997). On the other hand, study also takes the view of previous literature (such as: Dechow et al. 2003; Degeorge et al. 1999; Durtschi & Easton 2005) that such discontinuities would be consistent with, but not necessarily proof of, earnings management to achieve targets. Therefore, study tests the link between discontinuity in the distribution of earnings and earnings change and discretionary accruals as a proxy for earnings management.

To test whether Serbian companies engage in earnings management to report positive profits following hypothesis is stated:

H1- There is significantly more reported small positive earnings and significantly fewer reported small losses than would be expected.

To test whether Serbian companies engaged in earnings management to sustain last year's performance, the following hypothesis is stated:

H2- There is significantly more frequency of small earnings increases and significantly less frequency of small earnings decreases than would be expected.

In order to investigate how Serbian companies manage reported earnings, the link between discretionary accruals and threshold earnings management is tested. The following hypotheses are stated:

H3- The frequencies of negative small pre-managed earnings (i.e. Reported earnings minus abnormal discretionary accruals) and positive small pre-managed earnings are equal to the frequencies that are expected under a smooth distribution.

H4- The frequencies of negative small pre-managed earnings changes (i.e. Earnings change minus abnormal discretionary accruals) and positive small pre-managed earnings changes are equal to the frequencies that are expected under a smooth distribution.

4 RESEARCH DESIGN

4.1 Thresholds of earnings management

Previous studies have documented that managers tendency to avoid losses, avoid earnings decreases and meet analysts' earnings forecasts are the most important threshold that drive manipulating reported earnings (Burgstahler & Dichev 1997; Degeorge et al. 1999; Graham et al. 2005). However, some other studies (Brown & Caylor 2005; Dechow et al. 2003) have documented a change in the earnings threshold hierarchy. They report that avoiding negative earnings surprises has become more important than avoiding losses and earnings decreases in recent years.

In this paper, first two earnings thresholds are focused because the analysts' expectations are not available in the Serbian stock market. The first benchmark defines managers who want to avoid reporting losses and focuses on firms around the zero earnings level. The second benchmark defines managers who want to increase earnings as compared to a prior period and focuses on firms with positive or negative small earnings changes. Earnings (E) are measured as the annual earnings before extraordinary items scaled by opening total assets as EARNt/A t–1. Earnings changes are measured as following:

$$\Delta\mathrm{EARN}_t = \frac{EARN_t}{\mathrm{A\ t{-}1}} - \frac{EARN_{t-1}}{\mathrm{A\ t{-}1}}.$$

Where;
$EARN_{t=}$ Annual earnings before extraordinary items in year T
$EARN_{t-1}$ = Annual earnings before extraordinary items in year T − 1
A_{t-1} = Opening total assets

4.2 Abnormal accruals

In this study abnormal accruals were estimated, a proxy for accruals management, using modified Jones model developed by Dechow et al. (1995). The reason behind using this model is that it recognized in literature as the most powerful model for detecting earnings management (Young 1999).

$$\frac{\mathrm{TA_{it}}}{\mathrm{A_{it-1}}} = \propto_{\mathrm{i}} \left[\frac{1}{\mathrm{A_{it-1}}}\right] + \propto_{1\mathrm{i}} \left[\frac{\Delta\mathrm{REV_{it}} - \Delta REC_{it}}{\mathrm{A_{it-1}}}\right] + \propto_{2\mathrm{i}} \left[\frac{\mathrm{PPE_{it}}}{\mathrm{A_{it-1}}}\right] + \epsilon_{\mathrm{it}}$$

Total Accruals =	Non-Discretionary Accruals +	Discretionary Accruals

$\mathrm{TA_{it}}$ = total accruals in year t for firm i, it is estimated as earnings before extraordinary items less the net cash flows from operating activities.
$\Delta\mathrm{REV_{it}}$= revenues in year t less revenues in year t-1 for firm i.
$\Delta\mathrm{REC_{it}}$ = receivables in year t less receivables in year t-1 for firm i.
$\mathrm{PPE_{it}}$= Gross property, plant, and equipment in year t for firm i;
ϵ_{it} = error term in year t for firm i;
$\mathrm{A_{it-1}}$ = Total assets for firm i in year t-1.

4.3 Pre-managed earnings

This study identifies pre-managed earnings as reported earnings minus abnormal accruals (discretionary accruals). Then, it is calculated by subtracting these abnormal discretionary accruals which are estimated using modified Jones model developed by Dechow et al. (1995) from reporting earnings.

4.4 Distribution of reported earnings and earnings changes

Similar to Burgstahler and Dichev (1997) and Degeorge et al. (1999) histograms of the earnings and earnings changes distribution were represented to visualize the discontinuity of earnings and earnings change around zero. Earnings are defined as earnings before extraordinary items deflated by beginning of the year total assets. Regarding the changes of earnings are defined as difference the between earnings before extraordinary items year t and year t-1 deflated by beginning of the year total assets.

In constructing histograms, choosing the interval width is an essential point. Many methods have been recommended by Silverman (1986) and Scott (1992) cited by Burgstahler and Dichev (1997) to determine the interval width of a histogram. Given sample sizes, this study measures the interval width as 2 (IQR) n-1/3. This yields an interval width of 0.03 for reported earnings and 0.015 for earnings change distributions.

4.5 Statistical test

A statistical test constructed by Burgstahler and Dichev (1997) is utilized to test the significance of the study hypothesis. This test assumes that under the null hypothesis of no earnings management, the cross-sectional distribution of earnings levels and changes in earnings are relatively smooth. In accordance with Burgstahler and Dichev (1997), this study defines the smoothness of the distribution to be that the number of actual observations in any given interval is not significantly different from the average of the observations of the two immediately adjacent intervals divided by the estimated standard deviation of the difference. It is expressed in the following formula:

DS i (standardized difference) = (AN i -ENi)/SD
Where:
AN i: the actual number of observations in interval i,
EN i: the expected number of observations in interval i. Specifically, It is calculated as the average of the number of observations in the intervals immediately before and after the interval i. EA i = (AN i-1 + ANi+1)/2.
SD: standard deviation of the difference between the actual and expected frequency of the observations nearby interval i. It is the estimated as following,

SDi = [Np i (1 - p i) + (1/4)N(p i_1 + p i+1)(1 - p i_1 –p i+1)] 1/2,
Where,
N: is the total number of observations in the sample;
P i: is the probability that an observation is likely to fall into the interval i.

4.6 Sampling

The population of the study is composed of the Serbian listed companies on stock exchanges during 2009 and 2014. Consistent with the previous studies (Burgstahler & Dichev 1997; Peasnell et al. 2000) the sample is restricted to non-financial firms. The financial institutions are excluded because their specific accounting requirements differ substantially from those of industrial and commercial companies. As a result, the final sample consists of 30 firms from different industries representing observations over the period of 2009 to 2014.

5 RESULTS

5.1 Whether and how Serbian companies manage reported earnings to avoid reporting losses

From previously mentioned literature, earnings management designed to report positive profits is likely to be reflected in the across-sectional distribution of earnings in the form of unusually low frequencies of small losses and unusually high frequencies of small positive earnings.

The study examines the distribution of scaled earnings of the Serbian listed firms to test the hypothesis H1 that there are significantly more reported small positive earnings and significantly fewer reported small losses than would be expected.

Figure 1 is a histogram of the scaled earnings with interval width of 0.03 ranging from -0.15 to 0.15. Visual inspection indicates that there is a discontinuity in the distribution of scaled reported earnings around zero earnings benchmark. More explanation can be obtained from Table 1 , the frequency of firms in the interval (-0.03,0) is 0.07, (i.e. Group of firms that report earnings slightly less than zero), while the expected frequency of these firms is 0.19, which is the average of two immediately adjacent intervals (-0.06,-0.03 and 0,0.03). This difference of 0.068 between the actual and expected frequency suggests that some firms in the interval (-0.03, 0) may have incentives to increase their earnings to meet or exceed the zero-benchmarks to avoid reporting losses. Whereas, the frequency of firms in the interval (0, 0.03) is 0.36 (i.e. Groups of firms that report earnings slightly greater than zero) and the expected frequency of this group is 0.071, which is the average of two immediately adjacent intervals (-0.03, 0 and 0.03, 0.06). This asymmetry between actual and expected reported earnings around zero reflects that Serbian listed firms have a tendency to manage earnings to avoid reporting losses. This result confirmed by the statistical test developed by Burgstahler and Dichev (1997) to test the significance of the difference around zero-earnings benchmarks. Table 1 shows that the standardized difference in the interval immediately to the left of zero (-0.03, 0) is -4.35 and the standardized difference in the interval immediately to the right of zero (0, 0.03) is 6.98. Accordingly, under the assumption that the standardization differences are approximately normal, the test statistics are significant at a level less than 0.01 suggesting that firms manage reported earnings to avoid losses. Thus, the hypothesis H1 is supported indicating that Serbian listed firms tend to manage earnings to avoid reporting losses.

(Table 1 about here)
(Figure 1 about here)
(Figure 2 about here)

Furthermore, it was expected in H3 that the frequencies of negative small pre-managed earnings (i.e. Reported earnings minus abnormal discretionary accruals) and positive small

pre-managed earnings are equal to the frequencies expected under a smooth distribution. As expected, Figure 2 shows that the distribution of pre-managed earnings is relatively smooth around zero, suggesting that the discontinuity of the distribution of reported earnings around zero is a result of discretionary accruals from current period earnings. From Table 1 it can be seen that there is more detection of 0.18 of firms in the interval to the left of zero (-0.03,0) than the expected 0.125. This difference between actual and expected frequencies is insignificant according to z-test statistic of 1.57. Similarly, z-test indicate the insignificant difference between the actual and expected frequencies of the observations in the interval (0, 0.03) (i.e. Group of firms report earnings slightly more than zero). These results confirm H1 and H3 hypotheses that reported earnings is distributed irregularly around zero, while pre-managed reported earnings distributed smoothly.

5.2 Whether and how Serbian companies manage reported earnings to avoid earnings decreases

From aforementioned literature, earnings management to avoid earnings decreases is likely to be reflected in the cross-sectional distributions of scaled earnings changes in a form of unusually low frequencies of small earnings decreases and unusually high frequencies of small earnings increases. The study examines the distribution of earnings changes of Serbian listed firms in order to test the hypothesis H2 that there is significantly more frequency of small earnings increases and significantly fewer frequency of small earnings decreases than would be expected.

Figure 3 is a histogram of the scaled earnings changes with interval widths of 0.015 in the range from -0.075 to 0.075. Figure 3 shows a small discontinuity in the distribution of reported earnings changes near zero change benchmark. In more detail, Table 2 shows that the frequency of earnings changes in the interval (0, 0.015) is a 0.20 (i.e. Group of firms that report earnings increase slightly more than zero), while the expected frequency is 0.15. This difference of 0.05 is statically insignificant with z-test of 1.348. Regarding the frequency of earning changes in the interval (-0.015, 0), the actual frequency is 0.23 and it is more than the expected frequency which is 0.15. Accordingly, in general, these results do not support the hypothesis H2 that Serbian companies manage earnings to avoid earnings decreases. Furthermore, these findings are confirmed when the distribution of pre-managed earnings change was investigated. As can be seen in Figure 4, the distribution of pre-managed earning changes appears to be relatively smooth around zero benchmark change. This smoothness is supported by z-test in Table 2. The standardized difference for the interval (-0.015,0) immediately left of zero is 0.37, and the standardized difference for the interval (0,0.015) immediately right of zero is 0.12. Both values are not significant. This evidence is not supportive of the clam that Serbian listed companies use discretionary accruals to manage earnings to avoid earnings decreases. Thus, hypothesis H4 that frequency of negative small pre-managed earnings and positive small pre-managed earnings changes are equal to the frequencies that are expected under a smooth distribution is accepted.

(Figure 3 about here)
(Figure 4 about here)
(Table 2 about here)

6 FURTHER ANALYSIS

Further tests have been undertaken in order to assess the robustness of the study's results to scaling factor and errors related to the measurement of discretionary accruals. The study

reexamines distributions of reported earnings and earnings changes using total sales as scaling factor instead of total assets at the beginning-of-the-year. Furthermore, the study recalculates pre–managed reported earnings as reported earnings minus discretionary accruals using performance matched model by Kothari et al. (2005) instead of modified Jones model.

Figure 5 and 6 are histograms of distributions of reported earnings and pre-managed earnings scaled by total sales. The histogram interval widths are of 0.03 for scaled earnings ranging from -0.15 to .015. Figure 7 and 8 are histograms of distributions of earnings changes and pre-managed earnings changed scaled by total sales with interval widths of 0.015 ranging from -0.075 to 0.075.

As shown in Figure 5, there is discontinuity in the distribution of reported earnings around zero earnings. This discontinuity reveals that the frequency of reported positive small earnings occur significantly more than would be expected. Whereas, the frequency of small reported losses occur significantly less than would be expected. However, Figure 6 indicates that pre-managed earnings is distributed almost smoothly around zero earnings benchmark. Regarding the distribution of earnings changes the results also remain unchanged. Figure 7 and 8 indicate that there is no irregularity in distribution around zero earnings changes as well as pre-managed earnings change. Taken as a whole, the results obtained from further analysis confirm that previous results are not a result of a scaling factor or measurement error by using discretionary accruals as proxy for earnings management.

(Figure 5 about here)
(Figure 6 about here)
(Figure 7 about here)
(Figure 8 about here)

7 CONCLUSION

This study investigates whether and how Serbian companies manage earnings to avoid losses and to avoid earnings decreases to sustain the previous year's performance. To answer these questions first, we build on the earlier work by Burgstahler and Dichev (1997) and Degeorge et al. (1999) to investigate whether Serbian companies manage earnings to avoid reporting losses and earnings decreases. We expect that if Serbian companies manage earnings to achieve these targets, then there will be significantly more reported small profits and significantly fewer reported small losses than expected. Secondly, and similar to Gore et al. (2007), to investigate how these firms manage earnings discretionary accruals to capture the magnitude of earnings management were estimated. Then pre-managed earnings were calculated by excluding the discretionary accruals from reported earnings. It was expected that if firms engage in earnings management, pre-managed reported earnings and pre-managed reported earnings change would be distributed smoothly.

The empirical evidence found in this study shows that there is a discontinuity in the distribution of reported earnings around zero earnings benchmark suggesting that Serbian companies engage in earnings management to avoid reporting losses. Furthermore, this continuity disappears when discretionary accruals were subtracted from reported earnings indicating that Serbian companies use discretionary accruals as a tool for earnings management. However, the distribution of earnings change does not provide evidence that Serbian companies manage earnings to avoid earnings decreases. These results are robust to alternative methods of scaling earnings and various ways of estimating discretionary accruals.

The importance of the results of this study is twofold. Firstly, it is the first study to investigate earnings management in the Serbian context and which differs from that in previous literature;

for example, in terms of firm size and institutional setting. Therefore, it aspires to contribute to understanding and knowledge on the issue related to earnings management. Secondly, it is expected that the study's findings will assist stock market participants to evaluate the quality of firms' reports. Furthermore, it is expected to assist regulators to improve disclosure requirements.

However, the results of this study are subject to some limitations. First, the small sample size may lead to bias in the results, so that the generalization of these findings should be interpreted with caution. Second, distribution and total accruals approaches which have been used in this study, can only tell us about the level of earnings management without mention of the specific techniques that have been used. Therefore, further research is needed to investigate specific accruals that firms may use to alter reported earnings to achieve benchmark targets.

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Tables:

Table 1 : Frequency distribution of reported earnings and pre-managed earnings

Earrings				Pre- managed earnings		
Intervals	Obs, Freq.%	Obs-Exp.	Z	Obs, Freq.%	Obs-Exp.	Z
-0.15--0.12	0.01	-0.007	-1.282	0.007	-0.017	-1.533
-0.12--0.09	0.03	-0.027	-0.204	0.027	-0.003	-0.204
-0.09--0.06	0.05	-0.054	1.481	0.054	0.010	0.462
-0.06--0.03	0.02	-0.020	-2.286	0.061	-0.057	-2.185
-0.03-0	0.07	-0.068	-4.350***	0.182	0.057	1.578
0-0.03	0.36	-0.365	6.983***	0.189	0.041	1.088
0.03-0.06	0.07	-0.074	-5.448	0.115	0.000	0.000
0.06-0.09	0.11	-0.108	0.562	0.041	-0.071	-3.010
0.09-0.12	0.11	-0.108	1.029	0.108	0.054	1.894
0.12-0.15	0.05	-0.047	-0.905	0.068	0.003	0.136

Table 2 : Frequency of reported earnings change and pre-managed earnings change

Earnings change				Pre-managed earnings change		
Intervals	Obs, Freq.%	Obs-Exp.	Z	Obs, Freq.%	Obs-Exp.	Z
-0.075--0.06	0.027	-0.024	-1.299	0.047	-0.095	-3.72
-0.06--0.045	0.014	-0.030	-2.025	0.068	0.020	0.85
-0.045--0.03	0.061	0.007	0.288	0.047	-0.020	-0.90
-0.03--0.015	0.095	-0.051	-1.665	0.068	0.000	0.00
-0.015-0	0.230	0.084	2.150*	0.088	0.010	0.37
0-0.015	0.196	0.051	1.348	0.088	0.003	0.12
0.015-0.03	0.061	-0.071	-2.656	0.081	0.014	0.51
0.03-0.045	0.068	0.017	0.702	0.047	-0.010	-0.46
0.045-0.06	0.041	-0.017	-0.810	0.034	0.000	0.00
0.06-0.075	0.047	-0.010	-0.464	0.020	-0.095	-4.55

List of figures:

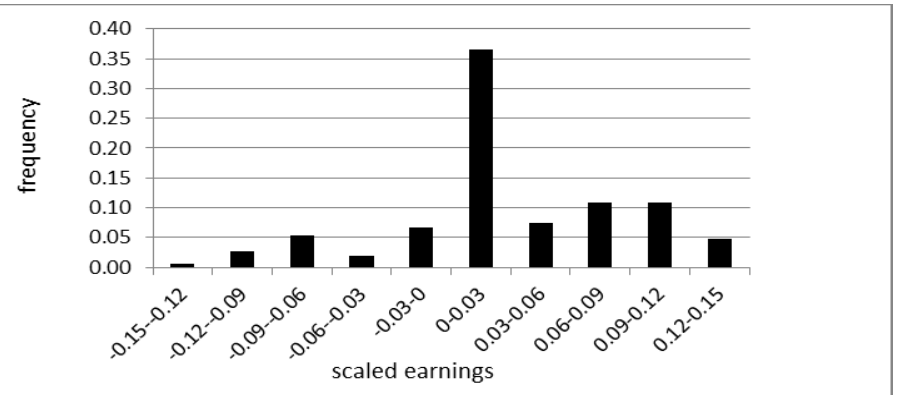

Figure 1: Histogram of net earning (scaled by total assets).

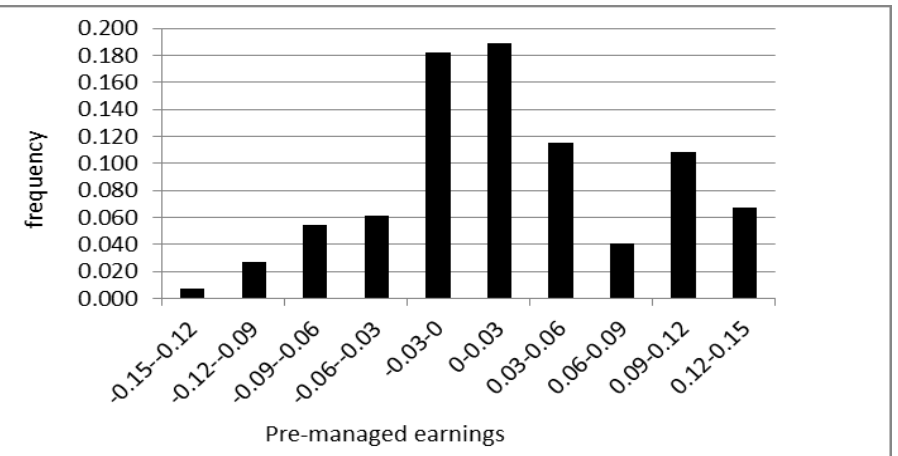

Figure2: Histogram of pre-managed earnings (scaled by total assets)

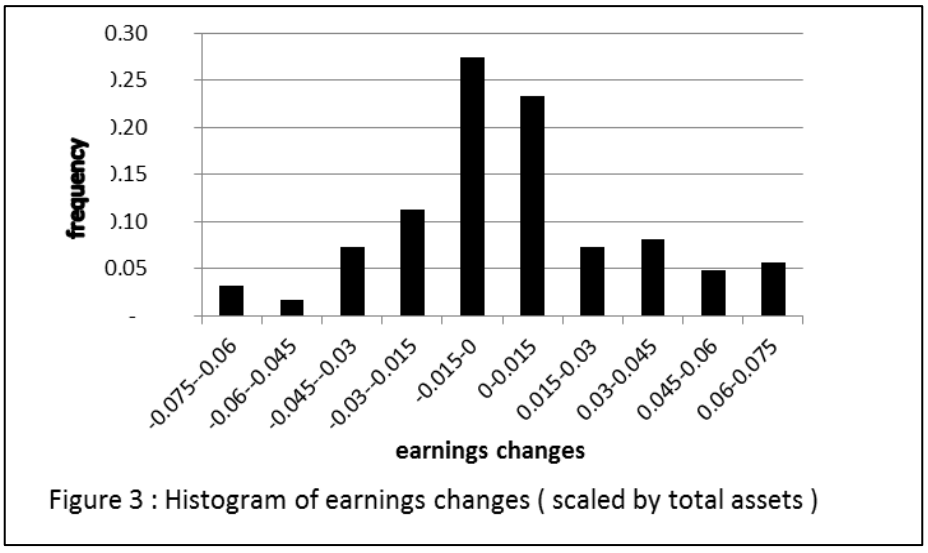

Figure 3 : Histogram of earnings changes (scaled by total assets)

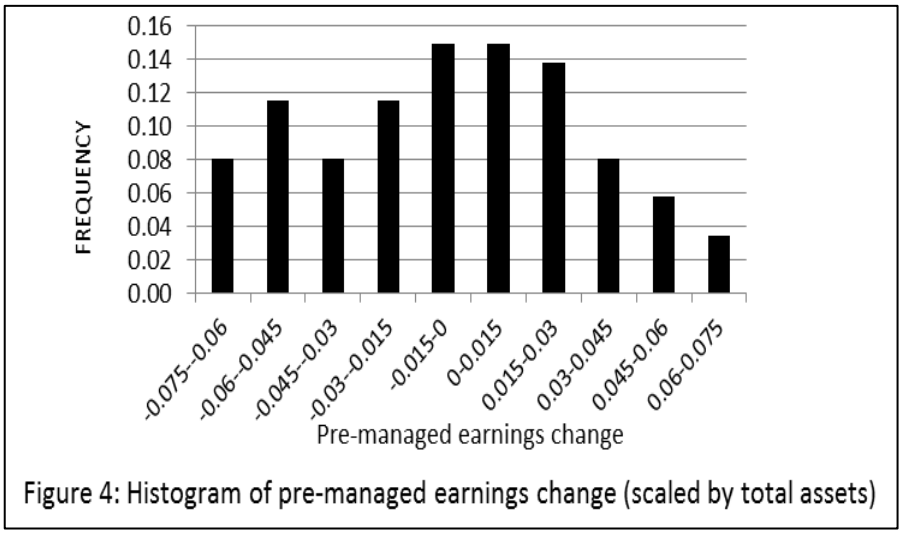

Figure 4: Histogram of pre-managed earnings change (scaled by total assets)

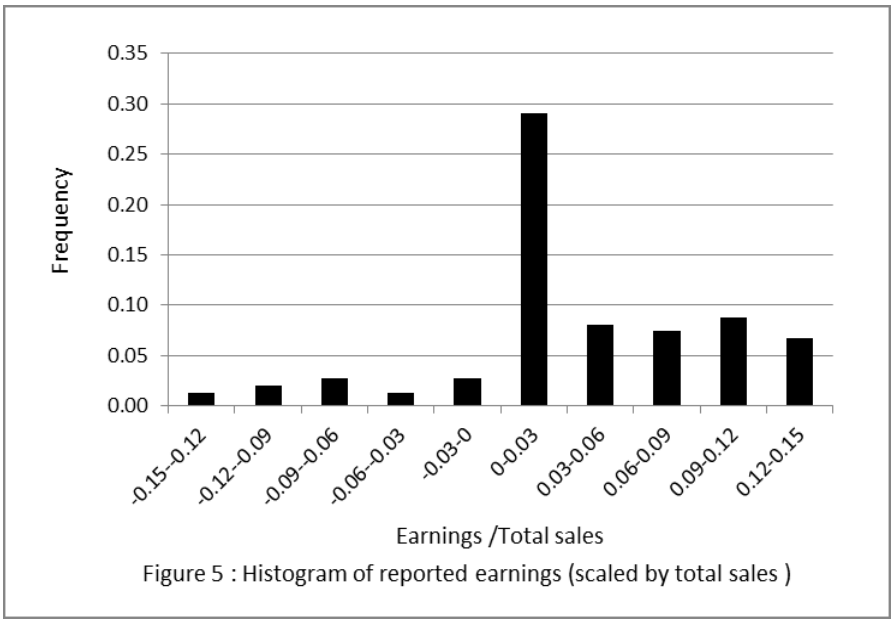

Figure 5 : Histogram of reported earnings (scaled by total sales)

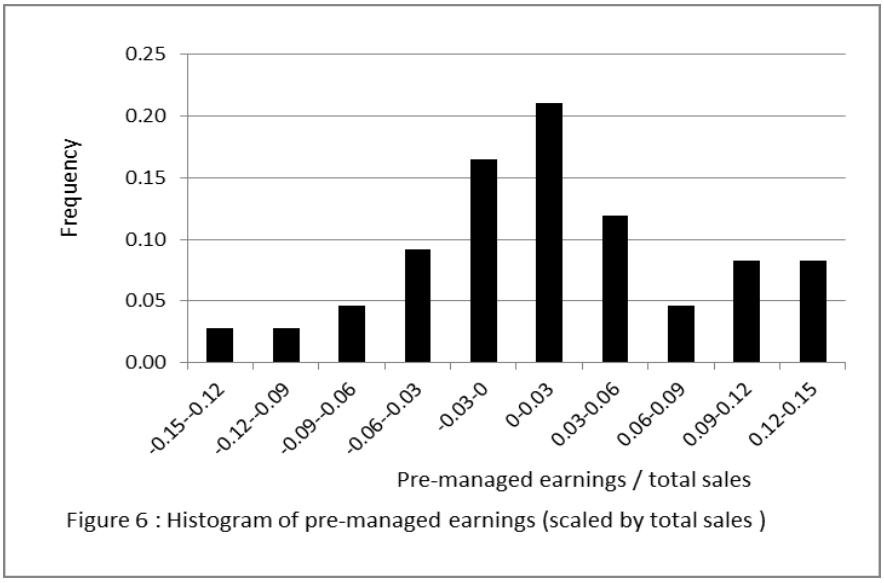

Figure 6 : Histogram of pre-managed earnings (scaled by total sales)

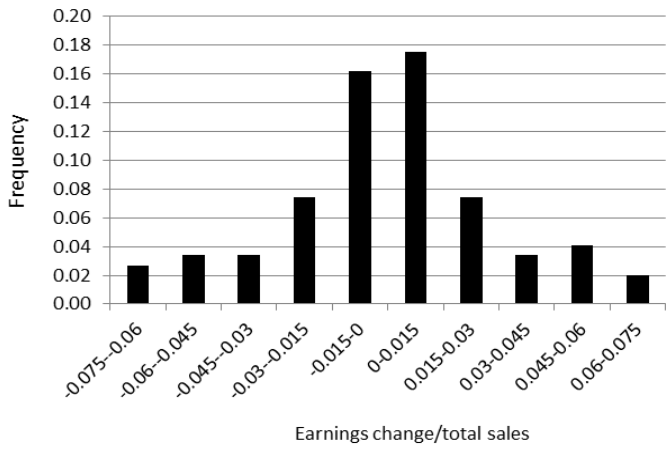

Figure 7 : Histogram of earnings changes (scaled by total slaes)

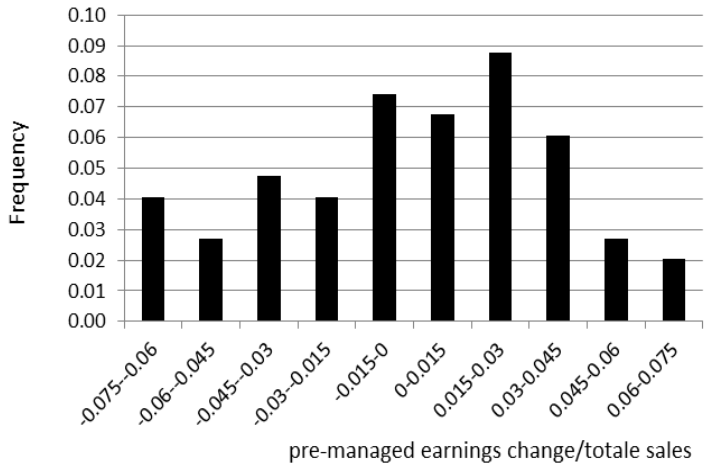

Figure 8 : Histogram of pre-managed earnings change (scaled by total sales