EARNINGS MANAGEMENT THRESHOLDS:
THE CASE IN TUNISIA

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ABSTRACT

Degeorge, Patel and Zeckhauser (1999) show that companies willingly manage their earnings with the aim of meeting or exceeding three earnings targets: zero earnings, last period's earnings, and analysts' earnings forecasts. In this paper, we focus on earnings management designed to achieve the above earnings thresholds within the framework of the Tunisian market. Applying Burgstahler and Dichev's (1997) methodology type to the annual data corresponding to the period from 1997 to 2004, our results indicate that Tunisian companies managed earnings to avoid losses and earnings decreases rather than to avoid negative earnings surprises.

Keywords: Earnings management, earnings thresholds, earnings distributions and JEL classification: M41

INTRODUCTION

It is worth noting that the collapse of Enron and WorldCom in the USA has drawn the attention of numerous researchers in the field of accounting to the issues of earnings management and accounting information transparency (Stubben, 2008). In this respect, several relevant studies (e.g., Degeorge et al., 1999; Brown & Caylor, 2005) have provided systematic evidence of some earnings management objectives that seem to be rather financial market-oriented. Indeed, managers often tend to manipulate accounting information in such manners as to influence the way through which investors view or assess their firms (Degeorge et al., 1999). Among these relevant studies, we can distinguish a

tendency towards the strategy of earnings management to achieve certain earning thresholds (Burgstahler & Dichev, 1997; Degeorge et al., 1999; Moehrle, 2002; Holland & Ramsay, 2003; Moreira & Pope, 2007; Jacob & Jorgensen, 2007; Lee, 2007; Charoenwong & Jiraporn, 2009; Caramanis & Lennox, 2008). Accordingly, firm managers try to run their earnings in such a way as to attain, or rather exceed, the following three thresholds: zero, last period's earnings, and consensus analysts' forecasts. The above-mentioned studies have generally presented empirical distributions of scaled earnings changes, earnings surprises, and earnings levels. To test the statistical significance of the hypothesised avoidance of earnings decreases, losses and surprises, they used a statistical test with the assumption that, under the null hypothesis of no earnings management, the distributions of scaled earnings changes, surprises and levels are relatively smooth. They find graphical and statistical evidence (for each threshold earning studied) that there is a disproportionately low frequency in the partition immediately to the left of zero and a disproportionately high frequency in the partition that includes zero. Noteworthy, however, is that most of these empirical works were focused on Anglo-Saxon countries characterised by outsider economies with relatively dispersed ownership, strong investor protection, and large stock markets (Leuz, Nanda & Wysocki 2003; Othman & Zeghal, 2006). Leuz et al. (2003), for instance, provide evidence based on a cross-country analysis that outsider economies present lower levels of earnings management than the insider countries with relatively concentrated ownership, weak investor protection, and less-developed stock markets. To the best of our knowledge, only a little attention has been paid to earnings-management motives in countries characterised by a debt-dominated capital market with concentrated ownership (Othman & Zeghal, 2006).[1]

The study of earnings management in Tunisia's emerging stock market is important for several reasons. First, the country's corporate shareholding is highly concentrated, and there is a relatively average level of investor protection and slow Stock Exchange development, despite intense efforts aiming to promote it (Madani & Sammari, 2009). Accordingly, in this context, the magnitude of earnings management is greater (Leuz et al., 2003). Second, the Tunisian accounting system, adopted in 1997, has been inspired by the international accounting system. The latter leaves a large discretionary margin for managers in the elaboration of their companies' financial statements. In fact, managers possess means and possibilities to manage earnings by exploiting the accounting flexibility permitted under the Generally Accepted Accounting Principles (GAAP). Indeed, Abaoub and Ben Amar (2008) have discovered that Tunisian company managers, in their determination to maximise shareholders' wealth, often try to cause damage to some company's stakeholders by resorting to some

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[1] This type of financial environment exists in Japan and several European countries.

earnings manipulation practices. Third, with an experience of about 14 years in the application of standards close to the IAS norms, Tunisia serves as a trustworthy example, supplying results for similar accounting systems, notably the south Mediterranean countries that have just recently begun or plan to apply the IAS standards.

Thus, by focusing on earnings management thresholds as a subject matter of research in a specific country environment different from that of the Anglo-Saxon countries, we can raise the main question of our research: given the strong emphasis on meeting or beating earnings targets, do firms "manage" earnings to meet these targets? Hence, within the framework of this research, we aim at providing some evidence and reaching two objectives:

(i) To investigate whether earnings management is done to meet or exceed the three earnings targets: zero earnings, last period's earnings and analysts' earnings forecasts, and

(ii) To examine the effect of the Tunisian institutional setting in meeting the earnings targets.

We first proceed by examining a distribution of reported earnings around key earnings thresholds to observe discontinuities in the distribution. Second, following Burgstahler and Dichev (1997), we compute the test statistic to illustrate and test for discontinuities in the distribution.

The empirical evidence obtained from this study shows a discontinuity around zero for levels and changes in earnings, which is suggestive of earnings management to avoid reporting losses and earnings decreases. Our results, in general, corroborate the findings of Burgstahler and Dichev (1997). Yet, contrary to the work of Degeorge et al. (1999), our research does not provide any evidence of account manipulation that might allow for avoiding negative earnings surprises.

Our results are important for several reasons. First, the institutional setting of this paper is a debt-dominated financial market with concentrated ownership (that of Tunisia), whereas prior earnings management threshold studies have mostly dealt with equity-dominated markets (Anglo Saxon context). It suggests that earnings management with the aim of exceeding thresholds does exist in different legal and accounting environments and that the results might be country-specific. Second, our findings have important implications for the Tunisian regulators as well as those of other emerging countries.

The remaining part of this article is organised as follows. In the next section, we discuss Tunisia's institutional background, followed by a brief review of the literature relevant to the current study. Next, we formulate the research hypotheses, continued with the discussion of the methodology pursued for empirical research as well as the obtained results and presentation of additional analyses. The last section provides a conclusion and suggests future research.

INSTITUTIONAL SETTING/BACKGROUND

The Tunisian Financial Reporting Environment

The examination of accounting history allows us to notice that the accounting rules in Tunisia have exhibited remarkable progress. We differentiate between three periods (Thabet, 2000):

   (i)   Before 1968
  (ii)   From 1968 to 1997
 (iii)   From 1997 to present

During the first period (before 1968) the Tunisian accounting was based on the 1947 and 1957 French accounting plans. Later from the year 1968 to 1997, the general accounting plan (PCG) published by the first Tunisian counsellor (High accounting counsellor) was used. This accounting plan was, however, not legally imposed. The third period which is from 1997 to the present is the third event characterising the accounting rule in Tunisia is the promulgation of the 30/12/1996 law relative to the companies' accounting systems.

According to the fourth article of the previously mentioned law: "The accounting system includes an accounting conceptual framework and standards. It forms an intermingled entity". The Tunisian accounting system adopted in 1997 has been inspired by the international accounting system. A total of 41 accounting standards have been pronounced. Accounting earnings are linked to fiscal rules (Madani & Sammari, 2009). This accounting system leaves a large discretionary margin for managers in the elaboration of their companies' financial statements. In fact, managers possess means and possibilities to manage earnings by exploiting the accounting flexibility permitted under the GAAP.

Financial System of Tunisian Companies

The Tunisian capital market can be viewed as a concentrated bank-dominated system, compared to the Anglo-Saxon capital market, which is characterised by

equity-dominated markets (Kasanen, Kinnunen and Niskanen 1996). In fact, the financing mode of Tunisian companies is based to a large extent on bank loans (Madani & Sammari, 2009). Thus, banks have a substantial influence on the decision making of the firms.

Ownership Structure

If the Anglo-Saxon capital market can be characterised by equity-dominated markets with a diffuse ownership structure, the Tunisian Companies are characterised by a concentrated ownership structure. In fact, there are majority shareholders who represent a majority or important monitoring blocks (Kouki & Guizani, 2009).[2] The shareholders' capital is made up of family firms as well as other companies (industrial or financial groups) or simply the State (Madani & Sammari, 2009). "Because capital provided by banks is very significant, managers pay little attention to the relatively small number of individual and minority shareholders" (Othman & Zeghal, 2006, p. 410), which is explained by the opaque nature of the firms' disclosure policies and their shortage of transparency (Matoussi and Chakroun, 2007).

LITERATURE REVIEW

In recent years, earnings management has received considerable attention from regulators, practitioners and academicians. Leuz et al. (2003, p. 506) define earnings management as being the "alteration of firms' reported economic performance by insiders either to mislead some stakeholders or to influence contractual outcomes". "Fraudulent financial reporting is distinguishable from earnings management in respect of the acceptability of accounting treatment under the GAAP" (Hasnan et al., 2009, p. 2). Nevertheless, the financial situation does not reflect the true and fair view of the real situation of the company (Dechow, Sloan & Sweeney, 1996). Previous authors have identified several potential managerial motivations for earnings management policy, including influencing capital market outcomes, influencing compensation or debt contracts and influencing regulatory outcomes (Healy, 1985; Dechow & Sloan, 1991; McNichols & Wilson, 1988, Duke & Hunt, 1990; Watts & Zimmerman, 1978; Hagerman & Zmijewski, 1979). Thus, a wide array of models was used to capture earnings management (Dechow et al., 1995; McNichols, 2000, 2002; Kothari, Leone & Wasley, 2005; for a review of model features).

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[2] Kouki and Guizani (2009) show that, in the Tunisian context, the ownership structure is affected by institutional investors (on average, they hold 35% of the capital).

As highlighted in the introduction, Burgstahler and Dichev (1997) and Degeorge et al. (1999) have adopted an alternative approach to examining earnings management. For instance, Degeorge et al. (1999) suggest that firms manage reported earnings for three major purposes, namely, to avoid losses, to avoid earnings decreases, and to meet analysts' earnings expectations. Two reasons were advanced to explain and support this trend: the prospect theory and the transaction cost theory.

The prospect theory developed by Kahneman and Tversky (1979) assumes that decision-makers often establish their assessments on the bases of gains and losses published in relation to a certain reference point rather than according to the final level of wealth. In addition, this theory also suggests that the individuals' utility functions take a concave curve corresponding to gains and a convex one for losses. Thus, via a certain increase of wealth, the corresponding increase in value and utility is higher at the moment when wealth increases shift the individual from a state of loss into a state of gain, concerning a certain reference point. Hence, the managers' temptations are to avoid negative earnings variations as well as the nil result (zero).

The transaction cost theory is based on the following two assumptions (Burgstahler and Dichev, 1997):

 (i) Information about profits affects transaction terms concluded between a firm and its stakeholders. Specifically, these transaction terms are generally more profitable for those companies that publish higher profits.

 (ii) As warehousing, covering and data processing costs are too high, they are likely to induce some stakeholders to focus on simple heuristics as being either nil levels or nil variations of profits in the case of decision-making.

Jointly, both suppositions imply that a company that broadcasts a profit decrease bears higher transaction costs than in the case when it proclaims profit increases. Thus, such suppositions provide clear explanations of some managers' motivations to avoid earnings decreases as well as publishing losses.

In addition to the above-mentioned theories, we can also cite other factors that provide further explanations for earnings management threshold motivations. First, DeAngelo, DeAngelo and Skinner (1996) have noted that companies that do not present regularly increasing earnings (i.e., the earnings growth curve is broken) are more likely to witness consecutive declines in Stock Exchange rates. Second, according to Myers and Skinner (2002), market mediators and intervening parties generally tend to focus essentially on firms publishing regularly increasing earnings. The idea is that investors tend to grant a

significant premium to such a category of firms. Hence, the longer the growth period is, the more important the premium becomes. The last two points raised may serve as explanations to the managers' motivation to present an increasing series of earnings. In other words, the earnings management applied by managers allows them to avoid earnings decreases and losses. Third, Bartov, Givoly and Hayn (2002) put forward the idea that the market grants a premium (in the form of Stock Exchange profitability) to firms capable of achieving quarterly earnings that are equal or superior to analysts' forecasts. Moreover, companies whose earnings "constitute favourable surprises show, in subsequent years, a higher growth in sales and earnings than firms with the same earnings performance but with unfavourable earnings surprises" (p. 203). These mentioned authors also observe that firms that have presented earnings equal or higher to analysts' forecasts via accounting manipulations have also recorded a Stock Exchange profitability higher than those observed for firms whose published earnings are located below analysts' forecasts. This outcome brings about a motivation to run their firms in such an efficient way so as to attain or even exceed the level foreseen by financial analysts.

HYPOTHESES DEVELOPMENT

Agency problems due to the separation of ownership and management are not severe in family firms (Type I agency problems) (Ali, Chen & Radhakrishnan, 2007). Earnings manipulation due to these Type I agency problems is likely to occur to a less extent in family firms. These firms face, however, severe agency problems that arise between controlling and non-controlling shareholders (Type II agency problems) (Ali et al., 2007). These Type II agency problems may lead to earnings management. Managers seek, for example, "to hide the adverse effects of related party transactions or to facilitate family members' entrenchment in management positions" (Ali et al., 2007, p. 239).

Accounts manipulation is not carried out to resolve agency problems that arise from the separation of ownership and management. In fact, the asymmetry of information is not relatively unimportant because monitoring shareholders tend to possess undiversified and concentrated equity position in their firms. In the Tunisian context, where companies generally have a monitoring shareholder, managers are motivated to use managerial discretion to modify the perception of the company's financial situation (Breton & Schatt, 2003; Graham, Harvey & Rajgopal, 2005, Bowen, DuCharme & Shores, 1995, 2008; Raman & Shahrur, 2008) on which stakeholders rely (e.g., tax administration, banks, employees, and customers). Due to Type II agency problems arising between controlling and non-controlling shareholders, managers seek also "to hide the adverse effects of related party transactions or to facilitate family members' entrenchment in

management positions" (Ali et al., 2007, p. 239). If firm mangers find out that the earnings figures (earnings before any incremental manipulation) are lower than zero or lower than those of the previous year, they will be more motivated to avoid earnings decreases and losses. Accordingly, our primary hypotheses (in alternative form) are as follows:

H_1: Managers seek to avoid losses.
H_2: Managers seek to avoid earnings decreases.

The Anglo-Saxon capital market can be characterised by equity-dominated markets with a diffuse ownership structure. Accordingly, shareholders, financial analysts, and the financial press put great pressure on managers (Othman & Zeghal, 2006, p. 411). Thus, they have a substantial influence on the decision-making of firms. Prior studies (Degeorge et al., 1999) have shown that managers increase earnings to avoid, for example, negative earnings surprises. The idea is that the market tends to grant a significant premium to such a category of firms (Bartov et al., 2002).

The large majority of Tunisian firms are family- or state-owned. Like in France, "equity is not diffused among the public and the capital market has a less important role in providing finance compared to banks that finance firms through loans" (Othman & Zeghal, 2006). Compared to many other countries (e.g., the US), managers' motivation to manipulate earnings in trying to influence the way through which investors view or assess their firms is not relevant in the Tunisian context. Thus, we expect that the Tunisian managers are not likely to avoid negative earnings surprises. The following hypothesis in its alternative form can be stated as follows:

H_3: Managers do seek to avoid negative earnings surprises.

DATA AND EMPIRICAL DESIGN

Sample

The population comprises Tunisian companies listed in the Tunis Stock Exchange. Despite the advantages of the quotation in the Stock Exchange, the latter has suffered, for some years, from a limited number of highly rated companies. There are approximately 50 companies listed on the Tunis Stock Exchange. The financial institutions as well as companies belonging to particular regulation industries were excluded for reasons of specificity of their accounting rules (Burgstahler & Dichev, 1997; Brown & Caylor, 2003). Thus, by eliminating such companies, our empirical study will only comprise 26 listed Tunisian

companies. The annual net earnings, the analysts' forecasts as well as the total assets were obtained from the following sites: "Stock Exchange of Tunis", "Tunisie Valeurs" and "Tustex". Due to some missing data and introduction years relevant to some firms listed in the Tunis Stock Exchange, our final sample consists of just 132 "firm-years" over the period ranging from 1997 to 2004.[3] The chosen companies prevail in four sectors: industry, service, business and travel.

Earnings Management Threshold Variables

As mentioned previously, the examination of the literature, especially Burgstahler and Dichev (1997) and Degeorge et al. (1999), has enabled us to deduce that earnings management thresholds are based upon the desire to achieve zero earnings as well as earnings *N*-1 (the results of the previous year) and the analysts' forecasts.

We define earnings levels as annual net earnings to measure our first threshold, which is avoiding losses. Annual net earnings changes are defined as net earnings in *N* minus net earnings in *N*-1 to measure our second threshold, which is avoiding earnings decreases. Earnings surprises are defined as reported annual net earnings *N* minus the consensus analyst forecast to measure our third threshold, which is avoiding negative earnings surprises. We deflate earnings levels, earnings changes and earnings surprises by the firm's total assets (Mard, 2004) for the sake of reducing the problem of heteroscedasticity.[4] Hence, for every company and for every exercise of the period (1997–2004), we calculated the following ratios:

$$\frac{\text{Net earning } N}{\text{Total assets } N}$$

$$\frac{\text{Net earning } N - \text{Net earning } N\text{-}1}{\text{Total assets } N}$$

$$\frac{\text{Net earning } N - \text{consensus analyst forecast}}{\text{Total assets } N}$$

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[3] We are limited to this period, as we do not have any analysts' earnings forecasts available for a more recent period.
[4] In this frame, several approaches were used in the relative accounting and financial literature. Note, for instance, the market value, the accounting value and sales or total assets (Burgstahler & Dichev, 1997), p. 102.

RESEARCH METHODOLOGY

The extant literature suggests that firms tend to manipulate accounting numbers to achieve certain earnings thresholds. To focus on this tendency at the level of the Tunisian firms' practices, we examine earnings management by employing "the distributions of earnings method".[5] This method, developed by Burgstahler and Dichev (1997), constitutes an innovative approach to testing for earnings management. They recommend undergoing a statistical test, which, under the hypothesis of earnings management absence, indicates that the empirical distributions of earnings levels, earnings changes and earnings surprises are relatively smooth.

The mentioned statistical test consists of making the difference between the actual number of observations and the number of expected ones in an interval *i* (to the left of zero) divided by the estimated standard deviation of this difference. Specifically, the statistical test, as developed by Burgstahler and Dichev (1997), is formulated as follows:

DS (standardised difference)
$= (n_i - n_i^*)$/standard deviation of the difference,

where

n_i: the number of observations falling in interval i,
n_i^*: the expected number of observations in interval i, which equals the average of observations noticed in the intervals *i-1* and *i+1*,

Standard deviation of the difference =

$$[Np_i (1 - p_i) + \tfrac{1}{4} N (p_{i-1} + p_{i+1}) (1 - p_{i-1} - p_{i+1})]^{1/2},$$

where N is the total number of observations in the sample and p_i is the probability that an observation is likely to fall into in interval *i*. The negative values of DS, which are equal or superior in absolute value to 2.33, indicate the evidence of earnings management to achieve thresholds (p-value = 0.01 in a normalised distribution) (Brown & Caylor, 2005).

Based on the works of Burgstahler and Dichev (1997) as well as those of Brown and Caylor (2003), we consider a threshold with highly negative values of DS as being proof of the existence of a more important earnings management.

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[5] "This approach was further developed by Burgstahler and Dichev (1997), and since then, a substantial volume of new research has applied this methodology to alternative earnings thresholds and in different operational settings" (Holland & Ramsay, 2003).

As already mentioned, several studies (Burgstahler & Dichev, 1997; Degeorge et al., 1999) "have examined the distribution of reported earnings to assess whether there is any evidence of earnings management" (Healy & Wahlen, 1999, p. 379). These studies have important appealing features (Healy & Wahlen, 1999). The previous research investigates earnings management through discretionary accruals (Jones, 1991; Dechow et al., 1995). A number of papers have questioned the reliability and power of this approach (McNichols, 2000). Burgstahler and Dichev (1997) and Degeorge et al. (1999) contribute an innovative approach to testing for earnings management by focusing on the distribution of reported earnings. First, the authors do not have to estimate discretionary accruals; instead, they inspect the distribution of reported earnings for abnormal discontinuities at certain thresholds (Healy & Wahlen, 1999). Second, "the power of their approach comes from the specificity of their predictions regarding which group of firms will manage earnings, rather than from a better measure of discretion over earnings" (McNichols, 2000, p. 336). Third, this approach captures the effects of earnings management through cash flows, which may not be captured by discretionary accrual measures (Healy & Wahlen, 1999). This methodology also presents drawbacks. First, "the distribution approach per se is silent on the approach applied to manipulate earnings. Second, it is also silent on the incentives for management to achieve specific benchmarks" (McNichols, 2000, p. 337).

EMPIRICAL RESULTS

The propensity to achieve earnings thresholds has been underlined by the accounting literature, notably by such authorities as Burgstahler and Dichev (1997), Degeorge et al. (1999), Holland and Ramsay (2003), Brown and Caylor (2003), Jacob and Jorgensen (2007), Lee (2007), Caramanis and Lennox (2008), and Charoenwong and Jiraporn (2009). In what follows, we shall confirm, empirically, the propensity to avoid losses, earnings decreases and negative earnings surprises.

Earnings Management to Avoid Losses: Graphical Analysis

Empirical distribution of earnings

Table 1 provides descriptive statistics for the scaled earnings. The total number of observations is 132. The mean (median) earning is 0.037 (0.044).

Table 1
Distribution Characteristics of the Sample's Annual Net Earnings

N	132 observations
Mean	0.037
Median	0.044
Skewness	−1.297
Kurtosis	11.657

Figure 1 presents the distribution of the net annual earning divided by the total assets, where each stick of histograms has a width of 0.03. The sample characteristics are as follows:
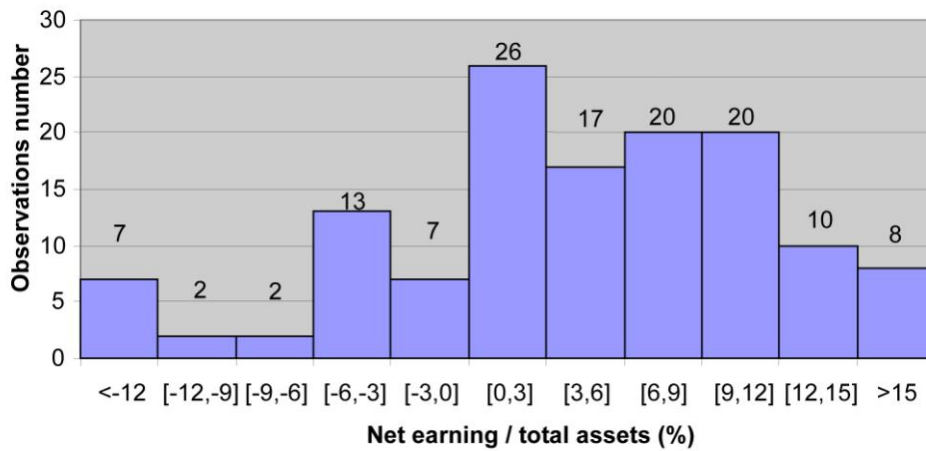

Figure 1: Empirical Distribution of the Annual Net Earning (Scaled by Total Assets).

The following distribution has the shape of a bell. It has an asymmetric tail extending out to the left that is referred to as negatively skewed or skewed to the left.[6] The positive coefficient of concentration indicates a stronger concentration of the observations than that observed in the normal distribution, meaning that the distribution is less flattened than a normal distribution.

Figure 1 indicates two major points reflecting managers' desires to avoid losses:

(i) The observed distribution presents a jump of the density at the point zero, which enables us to confirm the earnings management to avoid losses. In this respect, it clearly appears that managers have a strong desire to publish positive earnings.

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[6] The "skewness" refers to the asymmetry of the distribution.

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(ii) Similarly, these results depict an ascending knot in the distribution of earnings starting from –0.06 to –0.03, which indicates that managers have a desire to "avoid red ink".[7]

The propensity to avoid losses: The test of Burgstahler and Dichev (1997)

The propensity test designed to avoid publishing losses consists, primarily, of making the difference between the actual number of observations and the number of expected ones in an interval *i* (to the left of zero) divided by the estimated standard deviation of this difference. Then the second stage consists of comparing the value of this DS to 2.33. Indeed, some negative values[8] of DS, which are in absolute value equal or superior to 2.33, indicate an earnings management designed to achieve thresholds.

As far as this study is concerned, the value of the standardised difference equals –3.28 (|DS| > 2.33). The negative value of DS indicates that the frequency in the partition immediately below zero, the –1 partition (to the left of zero), is significantly lower than expected. The evidence of earnings management to avoid losses is statistically significant. Consequently, the hypothesis of non-earnings management can be rejected. This result indicates that Tunisian company managers are involved in earnings management to avoid losses. H_1 is therefore accepted.

Earnings Management to Avoid Earnings Decreases: Graphical Analysis

Empirical distribution of earnings changes

Table 2 shows descriptive statistics for the scaled earnings change variable. The total number of observations is 132. The mean and median earnings changes are positive (0.001).

Table 2
Distribution Characteristics of the Sample's Annual Net Earnings Variations

N	132 observations
Mean	0.001
Median	0.001
Skewness	0.215
Kurtosis	8.683

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[7] Managers want to avoid the critical situation that they might find themselves in. The same expression was used by Degeorge et al. (1999, p. 22).

[8] That is to say, the number of expected observations is superior to the actual number of observations.

Figure 2 below presents the distribution of the annual net earnings changes divided by the total assets, where each stick of histograms has a width of 0.01. The sample's characteristics are the following:
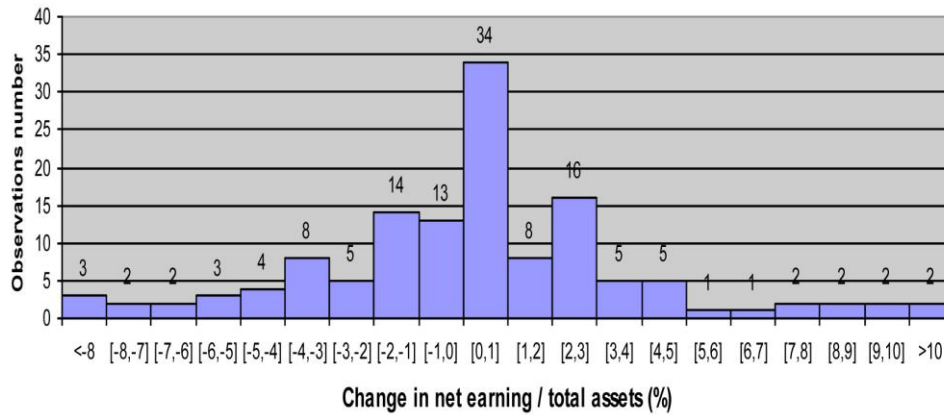

Figure 2: Empirical Distribution of Changes in Annual Net Earnings (Scaled by Total Assets).

The following distribution has the shape of a bell. For this data set, the skewness is 0.215, and the kurtosis is 8.683, which indicates moderate skewness and kurtosis. The coefficient of a weak symmetry in the absolute value indicates a balanced distribution between the strongly negative values (three observations lower than 8%) and the strongly positive values (two observations superior to 10%). However, the largely positive concentration coefficient indicates a concentration of observations around the average.

According to the results achieved by the works of Burgstahler and Dichev (1997), Degeorge et al. (1999), Brown and Caylor (2003) and Jacob and Jorgensen (2007), to "avoid earnings decreases" constitutes an important threshold to be targeted by managers. Indeed, the empirical distribution shows a jump in the density to the point zero, which enables us to confirm earnings management to avoid earnings decreases.

Propensity to avoid earnings decreases: Test of Burgstahler and Dichev (1997)

As far as this study is concerned, the value of the standardised difference is equal to −2.504 (|DS| > 2.33). The negative value of DS indicates that the frequency in the partition immediately below zero, the −1 partition (to the left of zero), is significantly lower than expected. The evidence of earnings management to avoid earnings decreases is statistically significant. As a consequence, the hypothesis of non-earnings management can be rejected. This result indicates that managers of

Tunisian firms do adopt earnings management to avoid earnings decreases. Thus, H_2 is confirmed.

Earnings Management to Avoid Negative Earnings Surprises: Graphical Analysis

Empirical distribution of earnings surprises

Table 3 shows descriptive statistics for the scaled earnings surprises variable. The total number of observations is 132. The mean and median earnings surprises are negative.

Table 3
Distribution Characteristics of the Sample's Annual Net Earnings Surprises

N	132 observations
Mean	−0.018
Median	−0.005
Skewness	−1.784
Kurtosis	10.473

Figure 3 presents the distribution of the net annual earnings surprises divided by the total assets, where each stick of histograms has a width of 0.01. The depicted sample characteristics are the following:
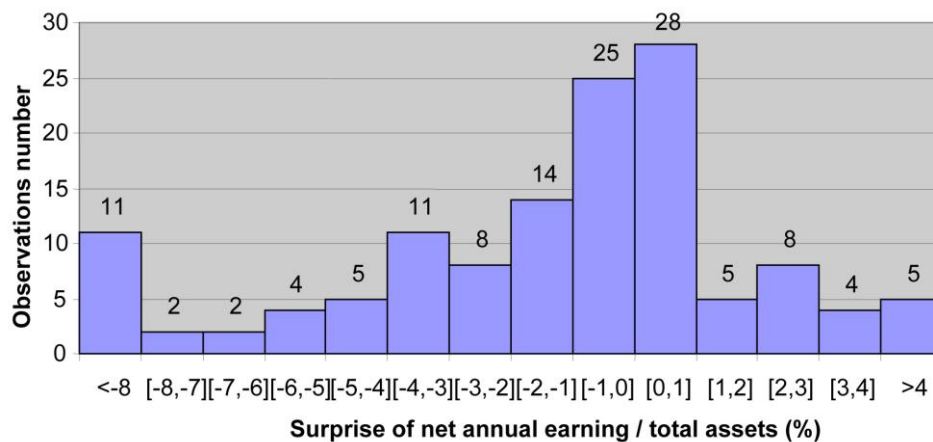

Figure 3: Empirical Distribution of the Net Annual Earnings Surprises (Standardised by Total Assets).

The following distribution has the shape of a bell. However, the negative coefficient of symmetry indicates a greater dispersal of negative values

(11 observations lower than 8%) than positive values (five observations superior to 4%). The positive concentration coefficient indicates a stronger concentration of the observations than that observed in the normal distribution, which means that the distribution is less flattened than a normal distribution.

Notably, the observed distribution does not reflect any net irregularity to the neighbourhood of zero. Contrary to the results reached by Degeorge et al. (1999, 2007), Brown and Caylor (2003, 2005) and Lee (2007), to "avoid negative earnings surprises" does not constitute an important threshold for the Tunisian firms' managers. Hence, the hypothesis of manipulating accounts so as to avoid negative earnings surprises does not seem relevant to the Tunisian context.

Propensity to avoid negative earnings surprises: Test of Burgstahler and Dichev (1997)

The value of the standardised difference appears to be positive in this study (1.2). The positive value of DS indicates that the frequency in the partition immediately below zero, the −1 partition (To the left of zero), is significantly higher than expected. The evidence of earnings management to avoid negative earnings surprises is statistically non-significant. Therefore, the non-earnings management hypothesis can be retained. This result indicates that managers of Tunisian firms are not involved in earnings management to avoid negative earnings surprises.

ADDITIONAL ANALYSIS: DOES SCALING INDUCE THE DISCONTINUITIES?

The discontinuities at zero in the distribution may be induced by the scaling procedures used (Jacob & Jorgensen, 2007). Therefore, we conduct further analyses to verify the robustness of our results. The results are presented in Figures 4, 5 and 6. It seems to us that results found in the previous section remain widely unchanged. The results do not support the Durtschi and Easton (2005) assertions that the Burgstahler and Dichev (1997) and Degeorge et al. (1999) results on the discontinuity at zero in the distribution of earnings, earnings changes and earnings surprises are attributable to scaling.
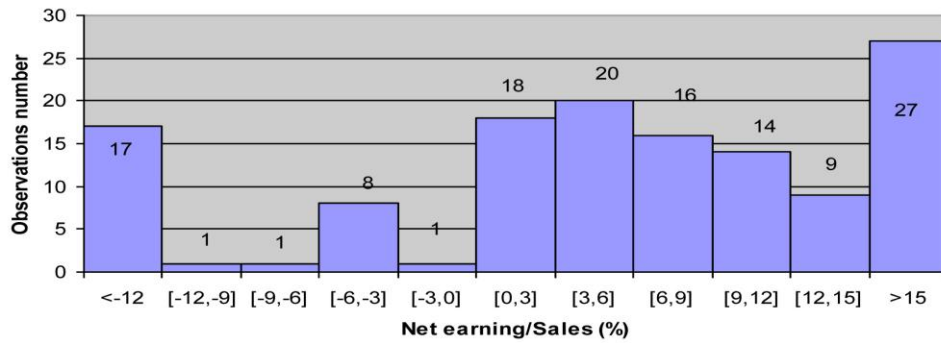
Figure 4: Empirical Distribution of the Annual Net Earning (Scaled by Sales).

The deviation from expected frequency is significantly negative in partition –1 (To the left of zero, standardised difference of –4.838, |DS| > 2.33).
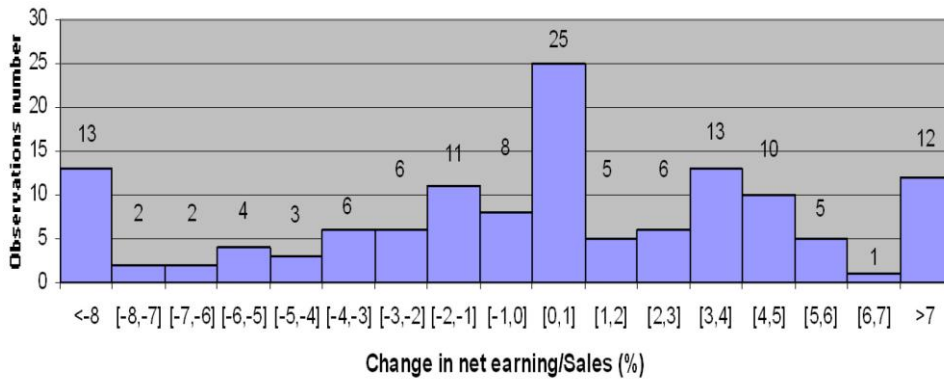

Figure 5: Empirical Distribution of Changes in Annual Net Earnings (Scaled by Sales).

The deviation from expected frequency is significantly negative in partition –1 (to the left of zero, standardised difference of –2.67, |DS| > 2.33).
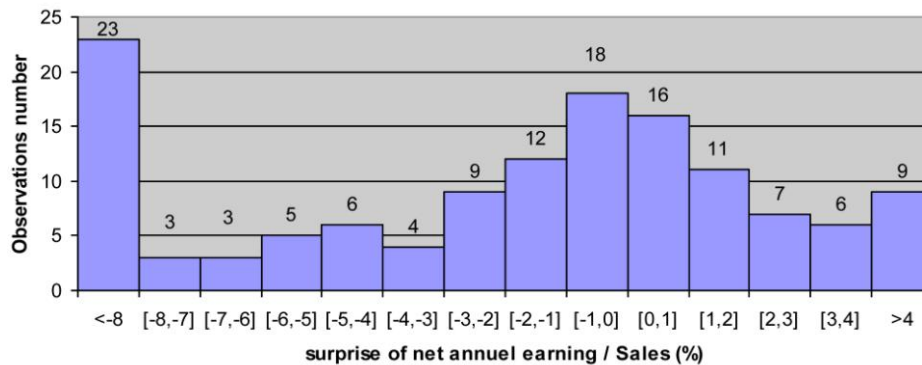
Figure 6: Empirical Distribution of the Net Annual Earnings Surprises (Standardised by Sales).

The deviation from the expected frequency is positive in partition –1 (to the left of zero, standardised difference of 0.873).

CONCLUSION, IMPLICATIONS, AND SUGGESTIONS
FOR FURTHER RESEARCH

Our study has investigated the earnings thresholds topic in Tunisia, which is a non-Anglo Saxon country. Previous studies (e.g., Bartov et al. 2002; Dechow, Richardson & Tuna, 2003; Brown & Caylor, 2003, 2005; Lee, 2007; Degeorge et al., 1999, 2007) have discovered that managers are more incited to manipulate earnings to achieve or beat the market forecasts and that this tendency has recently increased in scope (Brown & Caylor, 2003, 2005). However, our research does not show any proof of accounts manipulations permitting an avoidance of negative earnings surprises. Our results show that Tunisian managers are involved in earnings management to avoid losses and earnings decreases. Thus, they are consistent with the findings of Burgstahler and Dichev (1997), Degeorge et al. (1999), Holland and Ramsay (2003), and Jacob and Jorgensen (2007), among others, which were based on different market structures compared to Tunisia. The results are not surprising and show us that in a context characterised by the owner-largest shareholder (typically, the large majority of Tunisian firms are family) and the concentrated bank-dominated system, managers participate in firm management and influence most of the management decisions.

Our results have implications for regulatory bodies in Tunisia as well as those in other emerging countries. Our results suggest that earnings management exists in a different legal and accounting environment and that the results might be different from country to country, according to its institutional setting. In

particular, earnings management will be present in firms in all economies, but the magnitude is not uniform across countries. Regulators should focus on the prevailing corporate governance principles and enforce the rules to provide effective monitoring of earnings management in Tunisian firms.

This study is subject to some limitations. There is evidence that managers also have incentives to manage quarterly earnings to achieve thresholds (DeGeorge et al., 1999; Yang & Krishnan, 2005). In addition, the small sample size may lead us to prudence. Indeed, it is difficult to generalise the results of the present research. A careful examination of some control mechanisms of financial statements is needed for further research. It seems necessary, however, as cited by Van Caneghem (2006), that links between earnings management measured through the distribution of reported earnings and audit quality should be deeply and further studied.

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