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The Italian Unlisted Companies' Earnings Management Practices: The Impacts of Fiscal and Financial Incentives

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Abstract

This study explores the Italian unlisted companies' earnings management practices. Adopting the earnings distribution approach and the logit analysis, it shows that, as in other countries where there is a close alignment between accounting and tax rules, fiscal incentives encourage companies with negative earnings to manage them upward to overcome the threshold of zero decreasing the probability of tax authorities' investigations and those with positive earnings to manage them downward to bring them close to zero minimizing tax payments. As a result, they tend to report slightly positive earnings. The Italian unlisted companies' earnings management practices are not limited by financial incentives, here intended in terms of levels of bank loans. Rather, companies with higher level of bank loans are more likely to manage earnings. This study contributes to better understand earnings management practices in unlisted companies and not English-speaking contexts that are little explored in literature. Moreover, it contributes to better understand the nature and consequences of the impacts of fiscal and financial incentives on earnings management practices. The findings should be beneficial to stakeholders and auditors of unlisted companies and tax authorities.

Keywords: Earnings management, Earnings distribution approach, Avoidance of losses, Minimization of tax payments, Fiscal incentives, Financial incentives, Unlisted companies, Italy

1. Introduction

This study explores the Italian unlisted companies' earnings management practices. In particular, it aims to verify their existence and to understand whether and how tax and financial incentives impact on them.

The literature on earnings management practices is vast (e.g. Dechow and Skinner, 2000; Dechow, Ge and Scharand, 2010; Healy and Wahlen, 1999; Schipper, 1989), but it is mainly focused on listed companies and on English-speaking contexts. This study, instead, explores unlisted companies and the Italian context.

The case of the Italian unlisted companies is particularly fruitful for contributing to literature.

With regard to tax incentives, previous studies have found that, especially in countries where there is a close alignment between accounting and tax rules, they encourage companies to manage earnings (e.g. Baralexis, 2004; Coppens and Peek, 2005; Eilifsen et al., 1999; Guenther, 1994; Hermann and Inoue, 1996; Marques et al., 2011; Othman and Zeghal, 2006). Italy can be included among these countries (Lamb, Nobes and Roberts, 1998). Thus, this study contributes to better understand the nature and consequences of the impact of fiscal incentives on earnings management practices.

With regard to financial incentives, previous studies have explored whether and how the level of bank loans impacts on the earnings management practices induced by fiscal incentives (e.g. Baralexis, 2004; Moreira, 2006). They have come to conflicting conclusions. This study contributes to better understand the nature and consequences of the impact of financial incentives on earnings management practices. In doing so, it also responds to the Healy and Wahlen (1999)'s call for identifying factors that limit earnings management practices.

This study proceeds as follows. Section 2 briefly reviews the literature and develops the research hypothesis. Section 3 introduces the research design and the sample selection. Section 4 shows and discusses the empirical results. Section 5 summarizes the main findings.

2. Literature review and development of the hypothesis

Previous studies have found that unlisted companies tend to report slightly positive earnings in countries (as Italy) where there is a close alignment between accounting and tax rules (e.g. Coppens and Peek, 2005; Marques et al.,

2011). This is due to the impact of two tax incentives that work in opposite directions. Fiscal incentives encourage companies with positive earnings to manage them downward to bring them close to zero minimizing tax payments, on the one hand, and those with negative earnings to manage them upward to overcome the threshold of zero decreasing the probability of tax authorities' investigations, on the other hand. As a result, they tend to report slightly positive earnings.

Such studies have explored the existence of earnings management practices by analysing the frequency distributions of earnings. This is the so-called earnings distribution approach. It is based on the idea that, in the absence of earnings management practices, earnings are distributed in a regular way, namely without discontinuity. It is expected that the number of companies that achieve results lower than a given level to a certain extent and the number of companies that achieve results higher than that given level to the same extent are not significantly different. As a result, it follows that the occurrence of discontinuity around that given level is a signal of earnings management practices.

The frequency distribution of earnings of the companies that manage earnings upward to avoid losses presents a discontinuity between the first negative interval to the left of zero and the first positive interval to the right of zero (e.g. Baber and Kang, 2002; Beatty, Ke and Petroni, 2002; Brown and Caylor, 2004; Burgstahler and Dichev, 1997; Collins, Pincus and Xie, 1999; Coppens and Peek, 2005; Degeorge, Patel and Zeckhauser, 1999; Easton, 1999; Hamdi and Zarai, 2012; Hayn, 1995; Holland and Ramsay, 2003; Jacob and Jorgensen, 2007; Kerstein and Rai, 2007; Marques et al., 2011; Phillips et al., 2004; Revsine et al., 2009). This is the so-called discontinuity around zero. That of the companies that manage earnings downward to minimize tax payments presents a discontinuity between the first positive interval and the second positive interval to the right of zero (e.g. Coppens and Peek, 2005; Marques et al., 2011). Although the presence of discontinuities has been widely interpreted as evidence of earnings management practices, some studies have challenged this interpretation (e.g. Beaver, McNichols and Nelson, 2007; Dechow, Richardson and Tuna, 2003; Durtschi and Easton, 2005; Durtschi and Easton, 2009; Holland, 2004).

To test whether fiscal incentives impact on the Italian unlisted companies' earnings management practices, as in previous studies, the two following null hypothesis are tested:

H1: *The frequency of the first negative interval to the left of zero is equal to the frequency of the first positive interval to the right of zero.*

H2: *The frequency of the first positive interval to the right of zero is equal to the frequency of the second positive interval to the right of zero.*

Previous studies have found that companies with higher actual tax rates are more likely to manage earnings downward to minimize tax payments than companies with lower actual tax rates (e.g. Goncharov and Zimmermann, 2006; Marques et al., 2011).

Italian unlisted companies usually have actual tax rates (defined as the ratios between income taxes and income before taxes) that differ from the nominal tax rate (established by law and equal for all companies). This happens because the rules for the determination of costs and revenues for tax and accounting purposes differ. Italian unlisted companies usually have the fiscal tax base that diverges (and is generally higher) from the accounting tax base (resulting from financial statements). The determination of the fiscal tax base depends on the accounting tax base to which it is necessary to make a series of increases and decreases in order to take into account the different rules for the determination of costs and revenues according to fiscal and accounting rules. As a result, the actual tax rates differ from the nominal tax rate and can vary from company to company.

To test whether the level of actual tax rates has an impact on the Italian unlisted companies' propencity to manage earnings, as in previous studies, the following null hypothesis is tested:

H3: *Companies with higher actual tax rates are no more likely to manage earnings downward than companies with lower actual tax rates.*

Moreira (2006) has explored the impact of the levels of bank loans on the Portuguese unlisted companies' earnings management practices. He has found that companies with higher level of bank loans have a higher propencity to manage earnings upward to avoid losses and a lower propencity to manage earnings downward to minimize tax payments than companies with lower levels of bank loans. He has suggested that "the probability of obtaining the necessary funds at a reasonable cost is positively related to the quality of their accounting numbers, given that bank's credit decisions are based on firms' financial information. Thus, this […] incentive tends to motivate firms into adopting accounting choices that provoke an impact on reported earnings in the

opposite sense to that related taxes". It is like if the bank system acts as a controller of earnings management practices of Portuguese unlisted companies.

On the contrary, Baralexis (2004) has found that the same incentive does not work in the Greek context. So, banks require (informal) information additional to those reported in financial statements to grant loans to Greek companies.

To test whether the level of bank loans has an impact on the Italian unlisted companies' propencity to manage earnings, the following null hypothesis is tested:

H4: *Companies with higher levels of bank loans are no more likely to manage earnings than companies with lower levels of bank loans.*

3. Research design and sample selection

3.1 The earnings distribution approach

To test research hypothesis, the earnings distribution approach is used (Burgstahler and Dichev, 1997). It is particularly useful when, as in this study, the research aim is to detect the frequency of earnings management practices since it identifies the context in which a large number of companies appears to have managed earnings (e.g. Healy and Wahlen, 1999; McNichols, 2000; Sun and Rath, 2010).

The earnings distribution approach is based on the hypothesis that companies usually have great incentives to achieve certain earnings levels (earnings thresholds). Thus, the frequency distribution of earnings shows fewer observations than expected just below the earnings threshold and more observations than expected just above the earnings threshold. The discontinuity in the frequency distribution of earnings is the evidence of earnings management practices.

To explore the frequency distribution of earnings and to identify the presence of discontinuities, the graphical analysis method is used (Burgstahler and Dichev, 1997). It consists in the analysis of the graphical representation of the frequency distribution of earnings (usually an histogram). The abscissa axis shows earnings intervals. The ordinate axis shows frequencies, namely the numbers of the observations that fall in each earnings interval.

The earnings and the interval amplitude that should be used in the graphical representation are critical and debated issues because both of them may impact on the results of the graphical analysis method (e.g. Durtschi and Easton, 2005; Durtschi and Easton, 2009; Holland, 2004).

With reference to earnings, according to Burstahler and Dichev (1997), they are defined as follows:

$$E_{it} = \frac{NE_{it}}{TA_{it-1}} \quad (1)$$

where: E_{it} is the earnings reported by the company i in the financial year t; NE_{it} is the net income reported by the company i in the financial year t; TA_{it-1} is the total assets of the company i in the financial year t-1.

With reference to the interval amplitude, according to Silverman (1986), it is defined as follows:

$$A = 0.79 \times IQ \times N^{-\frac{1}{5}} \quad (2)$$

where: A is the interval amplitude; IQ is the inter-quartile range, namely the difference between the third and the first quartile of the earnings distribution; N is the total number of observations.

Applying such a method, the interval amplitude is 0.0025. So, the interval that will be marked with "1" is the first positive interval to the right of zero [0; 0.0025), the interval that will be marked with "2" is the second positive interval to the right of zero [0.0025; 0.0050), and so on.Conversely, the interval that will be marked with "-1" is the first negative interval to the left of zero [-0.0025; 0), the interval that will be marked with "-2" is the second negative interval to the left of zero [-0.0050; -0.0025), and so on. Each figure will truncated. They will show only the first thirty intervals of positive earnings (to the right of zero, from 1 to 30) and the first thirty intervals of negative earnings (to the left of zero, from -1 to -30). Earnings intervals are closed at the lower limit and opened at the higher limit, meaning that the interval includes the lower limit and excludes the upper limit, as marked by the use of square and round brackets respectively. The observations with net income exactly equal to zero (that are 99) have been excluded.

This study shows the results referring to the interval amplitude of 0.0025. However, the investigation has been

repeated using different interval amplitudes (e.g. Scott, 1979; Silverman, 1986) obtaining results that are qualitatively similar to those that are shown.

To estimate the statistical significance of the discontinuities that may emerge in the frequency distribution of earnings, the Burgstahler and Dichev (1997)'s test statistics is used. It is defined as follows:

$$Z_i = \frac{na_i - ne_i}{\sigma_i} = \frac{n_i - \frac{n_{i-1} + n_{i+1}}{2}}{\sqrt{Np_i(1 - p_i) + \frac{N(p_{i-1} + p_{i+1})(1 - p_{i-1} - p_{i+1})}{4}}} \quad (3)$$

where: Z_i is the statistic test, referring to interval i, with approximately normal distribution (with mean zero and standard deviation one); na_i is the actual number of observations that fall in the interval i; ne_i is the expected number of observations that fall in the interval i; σ_i is the standard deviation of the differences between the actual and the expected numbers of observation that fall in the interval i; n_i is the actual number of observations that fall in the interval i; N is the total number of observations; p_i is the portion of actual observations that fall in the interval i.

The test statistics is based on the assumption that the frequency distribution of earnings levels is smooth under the null hypothesis of no earnings management practices. It is smooth if the expected number of observations that fall in an interval of the frequency distribution of earnings is the average of the number of observations that fall in the two immediately adjacent intervals.

Garrod et al. (2006) report that the test statistic is not significantly affected by the choice regarding to earnings intervals.[1]

To test Hypothesis 3, the overall sample is divided into two sub-samples on the basis of the level of the actual tax rate. The first sub-sample consists of the observations for which the corresponding actual tax rate is higher than the median of the overall observations. The second sub-sample consists of the observations for which the corresponding actual tax rate is lower than the median of the overall observations.

The actual tax rate is defined as follows:

$$ATR_{it} = \frac{IBT_{it} - NI_{it}}{|IBT_{it}|} \quad (4)$$

where: ATR_{it} is the actual tax rate of the company i referring to the financial year t; IBT_{it} is the income before taxes of the company i referring to the financial year t; NI_{it} is the net income of the company i referring to the financial year t.

To test Hypothesis 4, instead, the overall sample is divided into two sub-samples on the basis of the level of the bank loans. The first sub-sample consists of the observations for which the corresponding bank loans are higher than the median of the overall observations. The second sub-sample consists of the observations for which the corresponding bank loans are lower than the median of the overall observations.

The level of bank loans is defined as follows:

$$BL_{it} = \frac{BANKLOANS_{it}}{TA_{it}} \quad (5)$$

where: BL_{it} is the level of bank loans of the company i referring to the financial year t; $BANKLOANS_{it}$ is the bank loans of the company i referring to the financial year t; TA_{it} is the total assets of the company i referring to the financial year t.

To test Hypothesis 3 and Hypothesis 4, the frequency distributions of earnings and the pervasiveness of earnings management practices of the two sub-samples are compared. They will not be different if the behaviours of the

[1] To discuss irregularities (such as discontinuities) in a distribution, it is necessary to refer to a benchmark distribution that can be considered regular. Comparing an empirical distribution with the expected (or theoretical) distribution allows researchers to reveal differences that can be interpreted as irregularities. As known, it is not possible to observe the frequency distribution of unmanaged earnings. Thus, the benchmark distribution is unknown. In the current study, the approach used to explore irregularities is that resulting to be the dominant one in the accounting literature (e.g. Beaver, McNichols and Nelson, 2007; Brown and Caylor, 2005; Brown, 2001; Burgstahler and Eames, 2003; Burgstahler and Dichev, 1997; Burgstahler, Hail and Leuz, 2006; Coppens and Peek, 2005; Das and Zhang, 2003; Daske, Gebhardt and McLeay, 2006; Degeorge, Patel and Zeckhauser, 1999; Glaum, Lichtblau and Lindemann, 2004; Holland and Ramsey, 2003; Leuz, Nanda and Wysocki, 2003; McNichols, 2003; Roychowdhury, 2006). In this approach, whatever law is applied, it is assumed that the frequency distribution of earnings is smooth if earnings are unmanaged.

two sub-samples relating to a certain incentive do not differ.

The pervasiveness of earnings management practices is measured through the Moreira (2006)'s degree of pervasiveness that is defined as follows:

$$pp_i = \frac{|ne_i - na_i|}{ne_i} \quad (6)$$

where: pp_i is the degree of pervasiveness referring to the interval i; ne_i is the expected number of observations that fall in the interval i; na_i is the actual number of observations that fall in the interval i.

The degree of pervasiveness is based on the hypothesis that the higher the difference between the expected and actual observations falling in a given earnings interval, the higher the pervasiveness of earnings management practices.

3.2 The logit analysis

To statistically confirm the results obtained adopting the previous research method, a logit analysis model is used. The logit analysis aims to assess whether and how the dependent (explanatory) variables affect the probability that an observation assumes a specific attribute of the dichotomy dependent variable (e.g. Cramer, 2003).

The model, that is very parsimonious, focusing on the essential features of the hypothesis being tested, is:

$$EM_{it} = \beta_0 + \beta_1 lATR_{it} + \beta_2 lBL_{it} + \beta_3 \ln TA_{it} + \varepsilon_{it} \quad (7)$$

where: EM_{it} is a dummy variable that takes value 1 if the observation i falls in the first positive interval to the right of zero (interval 1), 0 otherwise; $lATR_{it}$ is a dummy variable that takes value 1 if the ATR corresponding to the observation i is higher than the median of the overall distribution, 0 otherwise; lBL_{it} is a dummy variable that takes value 1 if the BL corresponding to the observation i is lower than the median of the overall distribution, 0 otherwise; $lnTA_{it}$ is the natural logarithm of the total assets of the financial year t corresponding to the observation i; ϵ_{it} is the disturbance term; i and t are company and year indexes, respectively.

According to previous studies (e.g. Goncharov and Zimmermann, 2006; Marques et al., 2011), it is expected that the coefficient of the variable lATR will be positive ($\beta_1>0$). If the level of the ATR has a positive impact on the propensity of companies in practising earnings management, the higher the actual tax rate, the higher the probability that observations fall in the first positive interval to the right of zero.

According to previous studies (e.g. Moreira, 2006), it is expected that the coefficient of the variable lBL will be negative ($\beta_2>0$). If the level of BL has a negative impact on the propensity of the companies in practising earnings management, the higher the BL, the lower the probability that observations fall in the first positive interval to the right of zero.

With reference to the variable lnTA, no prediction about its sign is made.

3.3 Sample selection and data

The sample of the Italian unlisted companies used to test the research hypothesis has been taken (on 18th June 2013) from the AIDA database of Bureau van Dijk. The sample has been selected on the basis of the selection criteria below: companies that have the legal form of "company limited by share"; unlisted companies; active companies; companies that prepare (not consolidated) financial statement adopting the national accounting standards; companies operating in sectors different from the financial one; companies with the financial statement available in the database for each year in the period 2003-2011; companies with bank loans; companies for which all the necessary data are available. On the basis of the listed criteria, the sample includes a total of 90,594 observations.

Table 1 shows the main descriptive statistics referring to the sample. They highlight some important features of Italian unlisted companies. Those that are important for the aims of this study refer to the levels of the actual tax rates and the levels of the bank loans. On average, both of them are high. With reference to the dimensional level, considering the Italian context, the sample mainly includes medium-large companies. Compared to other contexts, however, they can appear small.

4. Results and discussion

Figure 1 shows the frequency distributions of earnings of the Italian unlisted companies included in the overall sample. It highlights two discontinuities. The first one is between the interval -1 and the interval 1. It is the so-called discontinuity around zero. The second one is between the interval 1 and the interval 2.

The values assumed by the statistics Z, showed in Table 2, confirm the statistical significance of the two discontinuities. In fact: the interval -1 is significantly under-represented (Z_{-1}=-70.50; *p*-value<0.0001); the interval 1 is significantly over-represented (Z_1=60.22; *p*-value<0.0001); the interval 2 is significantly under-represented (Z_2=-11.02; *p*-value<0.0001).

The frequency distribution of earnings should be approximately smooth in the absence of earnings management practices (Burgstahler and Dichev, 1997). Instead, it emerges an abnormally low frequency of slightly negative earnings (those that fall in the interval -1) and an abnormally high frequency of slightly positive earnings (those that fall in the interval 1) that are consistent with the presence of earnings management to avoid losses (e.g. Burgstahler and Dichev, 1997). Thus, Italian unlisted companies with negative earnings manage earnings upward to make them slightly positive to avoid losses. Moreover, it emerges an abnormally high frequency of observations in the interval 1 and an abnormally low frequency of observations in the interval 2 that are consistent with the presence of earnings management to minimize tax payments (e.g. Coppens and Peek, 2005; Marques et al., 2011). Thus, Italian unlisted companies with positive earnings manage earnings downward to make them slightly positive to minimize tax payments. As a result, Hypothesis 1 and Hypothesis 2 are rejected.

To test whether the level of ATR impacts on the Italian unlisted companies' earning management practices (Hypothesis 3), the overall sample is divided into two sub-samples, consisting of the observations for which the corresponding ATR is higher (HATR) or lower (LATR) than the median of the overall observations respectively.

The HATR frequency distribution of earnings (Figure 2) presents (1) a discontinuity around zero, (2) another discontinuity between the interval 1 and the interval 2, (3) a peak of observations in the interval 1, (4) a trend that is convex to the left of zero and concave to the right of zero.

The values assumed by the statistics Z (Table 3) confirm the statistical significance of the discontinuities. In fact: the interval -1 is significantly under-represented (Z_{-1}=-72.74; *p*-value<0.0001); the interval 1 is significantly over-represented (Z_1=65.06; *p*-value<0.0001); the interval 2 is significantly under-represented (Z_2=-12.55; *p*-value<0.0001).

In general, the HATR frequency distribution of earnings has all the features of the case in which fiscal incentives encourage earnings management practices (e.g. Coppens and Peek, 2005; Goncharov and Zimmermann, 2006; Marques et al., 2011). The HATR companies with negative earnings manage earnings upward to make them slightly positive to avoid losses and those with positive earnings manage earnings downward to make them slightly positive to minimize tax payments.

The LATR frequency distribution of earnings (Figure 2) presents (1) a discontinuity around zero, (2) no discontinuity between the interval 1 and the interval 2, (3) no peak of observations in the interval 1 (the interval of earnings to which corresponds the higher frequency of observations is one of the positive intervals to the right of zero following the first one), (4) a trend that is convex both to the left and to the right of zero.

The values assumed by the statistics Z (Table 4) confirm the statistical significance of the discontinuity. In fact: the interval -1 is significantly under-represented (Z_{-1}=-13.20; *p*-value<0.0001); the interval 1 is significantly over-represented (Z_1=2.29; *p*-value<0.0001). The interval 2 does not have a statistically significant difference between the expected and the actual numbers of observations.

In general, the LATR frequency distribution of earnings has all the features of the case in which fiscal incentives do not encourage earnings management practices (e.g. Coppens and Peek, 2005; Goncharov and Zimmermann, 2006; Marques et al., 2011). The LATR companies with negative earnings manage earnings upward to make them positive and to avoid losses and, unlike the HATR sub-sample, those with positive earnings do not manage earnings downward to make them slightly positive to minimize tax payments.

The frequency distributions of earnings of two sub-samples will not be different if the behaviours of such two sub-samples relating to certain incentives do not differ. Instead, it emerges that they are different. In addition, the pervasiveness of earnings management practices differs between the two sub-samples, as shown by the indexes of pervasiveness (pp) reported in Table 3. Their values, referring to the earnings intervals of interest (-1, 1 and 2), are always higher in the HATR sub-sample than in the LATR sub-sample.

The HATR companies are more likely to manage earnings than LATR companies. Thus, Hypothesis 3 is rejected.

To test whether the level of BL impacts on the Italian unlisted companies' earning management practices (Hypothesis 4), the overall sample is divided into two sub-samples, consisting of the observations for which the corresponding BL is higher (HBL) or lower (LBL) than the median of the overall observations respectively.

Both the frequency distributions of earnings (Figure 3) present (1) a discontinuity around zero, (2) another

discontinuity between the interval 1 and the interval 2, (3) a peak of observations in the interval 1, (4) a trend that is convex to the left of zero and concave to the right of zero.

The values assumed by the statistics Z (Table 4) confirm the statistical significance of the discontinuities. With reference to the HBL sub-sample, the interval -1 is significantly under-represented (Z_{-1}=-59.85; *p*-value<0.0001), the interval 1 is significantly over-represented (Z_1=51.12; *p*-value<0.0001), the interval 2 is significantly under-represented (Z_2=-9.96; *p*-value<0.0001). With reference to the LBL sub-sample, interval -1 is significantly under-represented (Z_{-1}=-38.54; *p*-value<0.0001); the interval 1 is significantly over-represented (Z_1=32.86; *p*-value<0.0001); the interval 2 is significantly under-represented (Z_2=-5.27; *p*-value<0.0001).

In general, both the frequency distributions of earnings have all the features of the case in which fiscal incentives encourage earnings management practices (e.g. Coppens and Peek, 2005; Goncharov and Zimmermann, 2006; Marques et al., 2011). With reference to both the sub-sample, the companies with negative earnings manage earnings upward to make them slightly positive to avoid losses and those with positive earnings manage earnings downward to make them slightly positive to minimize tax payments.

However, the pervasiveness of earnings management practices differs between the two sub-samples, as shown by the indexes of pervasiveness (pp) reported in Table 4. Their values, referring to the earnings intervals of interest (-1, 1 and 2), are always higher in the HBL sub-sample than in the LBL sub-sample.

The HBL companies are more likely to manage earnings than LBL companies. Thus, Hypothesis 4 is rejected.

The previous findings are partially in contrast with those of Moreira (2006). He has also found that Portuguese unlisted companies with higher levels of bank loans manage earnings upward to avoid losses in a more pervasive way than those with lower levels of bank loans. He, instead, has found that Portuguese unlisted companies with higher levels of bank loans do not manage earnings downward to minimize tax payments in a more pervasive way than those with lower levels of bank loans. He has found that Portuguese unlisted companies with higher levels of bank loans tend to avoid losses and to target earnings to intervals not close to zero. Thus, financial incentives limit Portuguese unlisted companies' practices to manage earnings downward to minimize tax payments. This does not happen in the Italian context.

The logit analysis, based on the model described above, statistically confirm what has just emerged from the previous analysis. Table 5 shows its results.

The coefficient of the variable lATR (β_1) is positive, as expected. This means that the HATR observations have a higher probability of falling in the interval 1 than the LATR observations.

The coefficient of the variable lBL (β_2) is positive, differently from what is expected. This means that the HBL observations have a higher probability of falling in the interval 1 than the LBL observations.

The values of the two coefficients are consistent with the results of the previous analysis.

The coefficient of the variable lnTA (β_3) is positive. This means that the higher the total assets, the higher the probability of falling in the interval 1.

All the estimated coefficients are statistically significant (*p*-value 0.0001). The goodness-of-fit test indicates that the model fits the data very well.

5. Conclusion

Adopting the earnings distribution approach, this study has shown that Italian unlisted companies are likely to practice earnings management. Those companies with positive earnings manage them downward to bring them close to zero minimizing tax payments. Those companies with negative earnings manage them upward to overcome the threshold of zero decreasing the probability of tax authorities' investigations. As a result, they tend to report slightly positive earnings. According to previous studies (e.g. Coppens and Peek, 2005; Marques et al., 2011), this is consistent with the presence of fiscal incentives.

The impact of fiscal incentives has been confirmed by the fact that earnings management practices aiming to bring earnings close to zero is observable among the companies that have higher ATR and not among the companies that have lower ATR (e.g. Goncharov and Zimmermann, 2006; Marques et al., 2011).

These findings confirm those of previous studies (e.g. Coppens and Peek, 2005; Goncharov and Zimmermann, 2006; Marques et al., 2011). In countries (as Italy) where there is a close alignment between accounting and tax rules, fiscal incentives have a great impact on unlisted companies' earnings management practices.

This study, moreover, has shown that the Italian unlisted companies' earnings management practices are not

limited by financial incentives, intended in terms of levels of bank loans. Rather, companies with higher BL are more likely to manage earnings than companies with lower BL. This is different from what happens in the Portuguese context (Moreira, 2006). This can explain why Italian banks does not give a great importance to the financial information provided by the Italian unlisted companies' financial statements and, as a result, why they require (informal) information additional to those reported in financial statements to grant loans to Italian companies.

An important implication of the findings of this study is that the Italian unlisted companies' earnings are not unconditionally informative about their performance. As a result, earnings should be interpreted with caution by those who use the financial statements' information. The findings should be beneficial to stakeholders and auditors of unlisted companies and tax authorities.

This study contributes to better understand earnings management practices in unlisted companies and not English-speaking contexts that are little explored in literature. Moreover, it contributes to better understand the nature and consequences of the impacts of fiscal and financial incentives on earnings management practices.

This study does not show neither the magnitude of earnings management nor the specific methods used to manage earnings in the Italian context. This depends on the disadvantages of the earnings distribution approach (e.g. Healy and Wahlen, 1999; Yu et al., 2006). Therefore, further study are needed for a more complete understanding of the Italian unlisted companies' earnings management practices.

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Table 1. Descriptive statistics

	2011	2010	2009	2008	2007	2006	2005	2004	total
Observations	11.052	11.251	11.275	11.416	11.336	11.277	11.185	11.802	90.594
Observations in positive intervals	7,893	8,364	7,457	8,346	9,179	8,964	8,819	9,390	68,412
	71.42%	74.34%	66.14%	73.11%	80.97%	79.49%	78.85%	79.56%	75.51%
Observations in interval 1	1,413	1,323	1,266	1,235	1,187	1,371	1,337	1,344	10,476
	12.79%	11.76%	11.23%	10.82%	10.47%	12.16%	11.95%	11.39%	11.56%
E:									
Mean	0.0086	0.0133	0.0064	0.0153	0.0220	0.0193	0.0177	0.0205	0.0154
standard deviation	0.0513	0.0463	0.0466	0.0502	0.0429	0.0422	0.0417	0.0469	0.0464
first quartile	-0.0038	-0.0002	-0.0100	-0.0021	0.0015	0.0010	0.0009	0.0009	0.0002
second quartile (median)	0.0054	0.0073	0.0042	0.0076	0.0118	0.0095	0.0093	0.0103	0.0080
third quartile	0.0271	0.0299	0.0234	0.0325	0.0383	0.0331	0.0321	0.0356	0.0315
ATR:									
mean	0.5881	0.5427	0.5462	0.6168	0.6434	0.7678	0.7127	0.7068	0.6410
standard deviation	0.8246	0.6788	0.7944	0.8382	0.7533	0.9625	0.7969	0.8175	0.8155
first quartile	0.3107	0.2931	0.2181	0.3287	0.4024	0.4476	0.4295	0.4166	0.3557
second quartile (median)	0.4520	0.4324	0.4235	0.4604	0.5234	0.5994	0.5745	0.5653	0.5094
third quartile	0.7217	0.6827	0.6783	0.7248	0.7506	0.8394	0.8169	0.8108	0.7619
BL:									
mean	0.2512	0.2466	0.2459	0.2489	0.2585	0.2478	0.2412	0.2394	0.2474
standard deviation	0.1704	0.1668	0.1686	0.1688	0.1737	0.1681	0.1646	0.1646	0.1683
first quartile	0.1045	0.1027	0.0984	0.1001	0.1073	0.1033	0.0973	0.0974	0.1012
second quartile (median)	0.2439	0.2393	0.2370	0.2395	0.2493	0.2379	0.2300	0.2277	0.2379
third quartile	0.3799	0.3728	0.3739	0.3787	0.3921	0.3764	0.3644	0.3624	0.3755
TA (/1.000):									
mean	39,562	39,063	37,293	37,665	34,089	32,314	30,271	27,066	34,616
standard deviation	62,398	62,289	59,917	59,920	54,209	51,083	48,936	43,709	55,777
first quartile	10,872	10,726	10,071	10,177	9,319	8,766	8,124	7,161	9,254
second quartile (median)	19,407	19,124	17,980	18,239	16,237	15,380	14,134	12,641	16,486
third quartile	39,825	39,597	37,413	37,973	34,342	32,408	29,881	26,606	34,762

A few observations take on extreme values. So all the descriptive statistics shown in the table are calculated after eliminating the upper and the lower 1% of the observations for each year.

Table 2. Statistics Z_i referring to the overall sample

	Earnings intervals			
	-2	-1	1	2
na_i	1.774	1.564	10.476	6.678
ne_i	1.627	6.125	4.121	7.747
σ_i	50.23	64.69	105.53	96.94
Z_i	2.93	-70.50	60.22	-11.02
p-value (two-tiled)	0.0034	<0.0001	<0.0001	<0.0001

Table 3. Statistics Z_i and pp_i referring to the HATR and LATR sub-samples

	Earnings intervals							
	-2		-1		1		2	
	HATR	LATR	HATR	LATR	HATR	LATR	HATR	LATR
na_i	1.609	165	1.467	97	10.032	444	6.002	676
ne_i	1.441	187	5.821	305	3.735	387	7.099	648
σ_i	47.18	16.03	59.85	15.72	96.80	25.09	87.43	31.31
Z_i	3.57	-1.34	-72.74	-13.20	65.06	2.29	-12.55	0.91
p-value (two-tiled)	0.0004	0.1802	<0.0001	<0.0001	<0.0001	0.0220	<0.0001	0.3628
pp_i	0.1166	0.1176	0.7480	0.6820	1.6859	0.1473	0.1545	0.0432

Table 4. Statistics Z_i and pp_i referring to the HBL and LBL sub-samples

	Earnings intervals							
	-2		-1		1		2	
	HBL	LBL	HBL	LBL	HBL	LBL	HBL	LBL
na_i	1.066	708	912	652	6.757	3.719	4.129	2.549
ne_i	978	649	3.912	2.214	2.521	1.601	4.879	2.868
σ_i	38.84	31.81	50.12	40.51	82.88	64.48	75.28	60.48
Z_i	2.27	1.85	-59.85	-38.54	51.12	32.86	-9.96	-5.27
p-value (two-tiled)	0.0232	0.0643	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
pp_i	0.0900	0.0909	0.7669	0.7055	1.6803	1.3229	0.1537	0.1112

Table 5. The logit analysis results

Independent variables	Predicted sign	Estimated coefficients	*p*-value
lATR	+	$+3.37363^{***}$	<0.0000
lBL	-	$+0.42857^{***}$	<0.0000
lnTA	(?)	$+0.14756^{***}$	<0.0000

χ^2 (goodness-of-fit test)	12.559.9	<0.0000

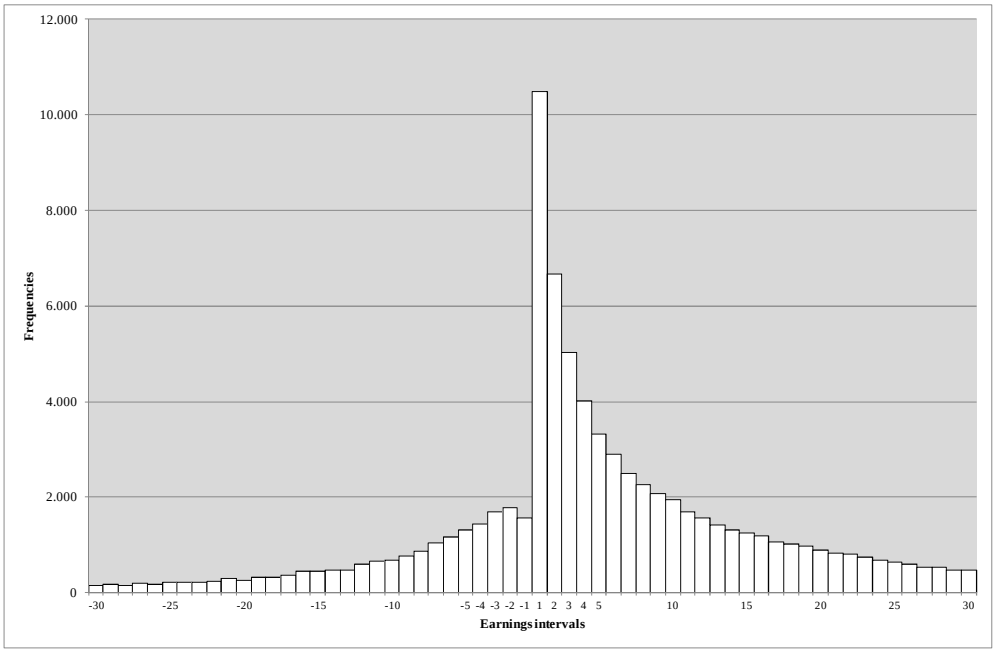

Figure 1. Italian unlisted companies' earnings distribution (overall sample)

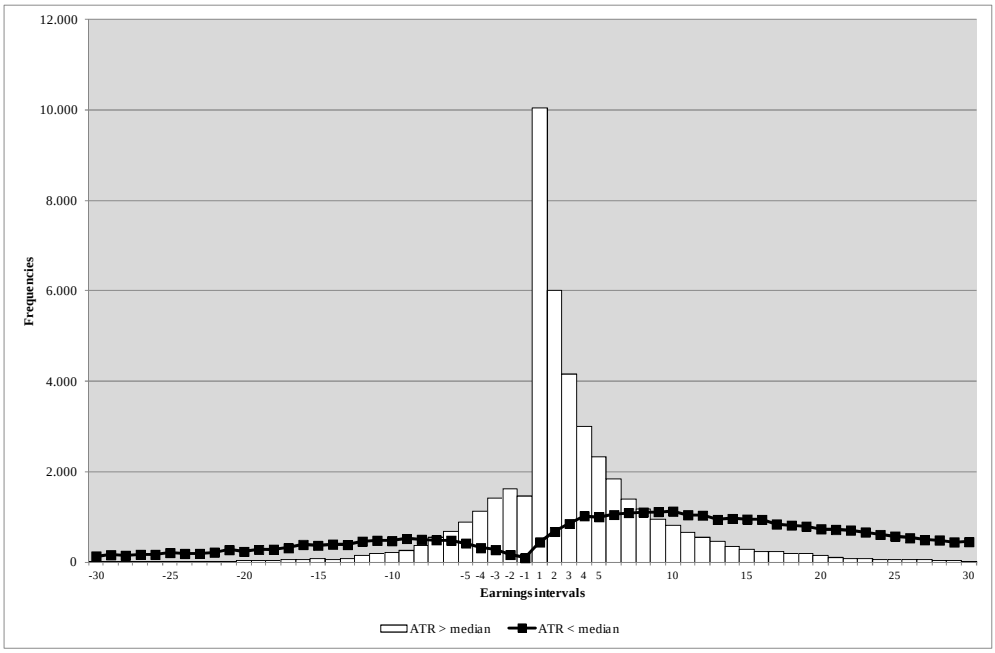

Figure 2. Italian unlisted companies' earnings distribution (sub-samples obtaining dividing the overall sample on the basis of the level of ATR)

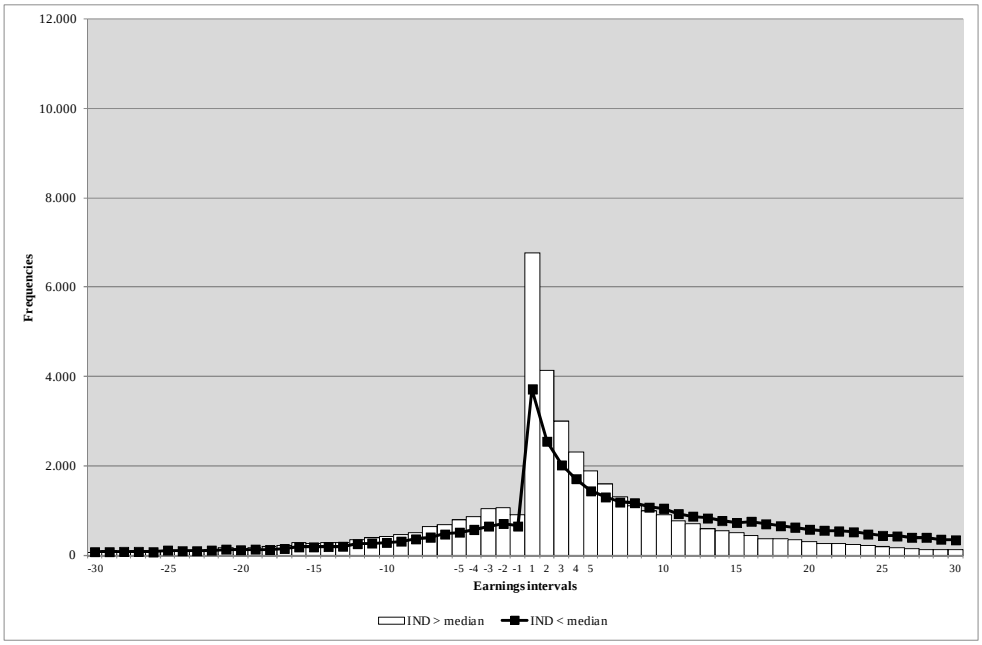

Figure 3. Italian unlisted companies' earnings distribution (sub-samples obtaining dividing the overall sample on the basis of the level of BL)