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Earnings management across publicly traded and privately held French SMEs

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Abstract: We study how SMEs' financial choices affect the quality of accounting information in the French case. Using a sample of 925 firms observed over a nine year period, we compare earnings management practices between publicly traded SMEs (hereafter PUB_SMEs) and privately held ones (hereafter PRIV_SMEs). We find evidence, firstly, that access to the stock market encourages SMEs to manage earnings so as to appear to be performing better, secondly, that SMEs that do not benefit from such access use proprietary earnings management to appear less risky. The first appear to be more shareholder-oriented and the second more lender-oriented in their earnings management practices. PRIV_SMEs manipulate their net income to avoid small losses more frequently than PUB_SMEs. We also notice more pronounced income-smoothing behaviour among PRIV_SMEs than among PUB_SMEs. An analysis of discretionary accruals shows that PUB_SMEs use accruals to increase their apparent performance more intensively than PRIV_SMEs.

Keywords: earnings management; privately held firms; publicly traded firms; SMEs; earnings distribution; income smoothing; discretionary accruals.

Biographical notes: Ludovic Vigneron is an Associate Professor at the University of Valenciennes. His current research interests focus on the relationships between information (creation, transmission and processing) and SMEs financing.

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1 Introduction

This paper addresses the question of whether the quality of financial reporting is different between publicly traded SMEs (hereafter PUB_SMEs) and privately held SMEs (hereafter PRIV_SMEs) in the French case. Firms' periodic accounting releases are the most accessible tools used by external finance providers to deal with asymmetric information problems when they consider financing SMEs (Berger and Udell, 2006). They use this information at the pre-contractual stage to select projects and at the post-contractual stage to monitor them. However, accounting rules offer flexibility that SMEs can exploit to appear artificially more suited to their finance providers' preferences. The way that they use this flexibility to manage earnings may depend on the type of finance provider that they want to satisfy first. Building on that, we put forward that PUB_SMEs develop a more shareholder-oriented accounting policy than PRIV_SMEs. As such, they use earnings management to increase their net income more intensively than PRIV_SMEs. Inversely, we put forward that the latter develop a more lender-oriented accounting policy. As such, use earnings management to reduce their apparent risk more intensively than PUB_SMEs.

Previous literature has long investigated determinants and deterrents of earnings management (Dechow et al., 2010). However, evidence of the impact of firms' access to the stock market remains mostly inconclusive. Some studies report increases in earnings management when firms go public, correlated with market pressure to perform (Cormier and Martinez, 2006), CEOs' remuneration plan linked to the firm's market value (Larcker et al., 2007), or other insiders' incentives for financial misconduct (Darrough and Rangan, 2005). Conversely, other studies report higher earnings quality in publicly traded firms than in private ones. This difference is explained by regulatory pressure and high demand for quality information on stock markets (Ball and Shivakumar, 2005, 2008).

Most of these works consider samples including both large firms and SMEs, and many of them focus exclusively on the consequences of IPOs. Considering SMEs only, we reduce the range of different incentives that can affect earnings management. In SMEs, separation between property and control are generally less important than in large firms. Manager/shareholder conflicts of interest and agency problems are less frequent in SMEs than in large firms (Ang et al., 2000). This helps us focus on other determinants of earnings management, determinants that are in line with maximising shareholder value, such as tax incentives and seeking a higher market value, minimising apparent risk. Furthermore, excluding large firms reduces the number of intermediaries that process company information (financial analysis, investment banks, credit rating agencies etc.) and allows us to consider only firms for which investors depend almost exclusively on gross accounting information to assess future profitability (Ang, 1992).

Few studies have looked at the issue in a French setting (Coppens and Peek, 2005; Cormier and Martinez, 2006). This setting is interesting for two reasons. Firstly, France, as a typical code-law country, presents lower contract-enforcement efficiency than typical common-law countries like the USA or the UK (Hope, 2003; Leuz et al., 2003). Secondly, it is a bank-based financial system. Financial markets are less developed in this type of economy than in Anglo-Saxon economies (Ali and Hwang, 2000). These features shape the French accounting system which is more tax oriented than value relevant. It also has consequences on investor demand for accounting information.

The present paper contributes to earnings management literature by testing differences in the quality of financial reporting across PUB_SMEs and PRIV_SMEs. We use three different types of earnings quality measures: irregularity around 0 in net income distribution, income smoothing metrics and discretionary accruals estimations. The first two measures are related to the desire of firms to appear less risky than they really are. The third one is related to the desire of firms to appear to be performing better or worse than they really are. The study is conducted on a sample of 925 SMEs observed between 2002 and 2010 (7,451 firms/years observations). 245 are PUB_SMEs and 680 are PRIV_SMEs. To maintain consistency among firms' accounting obligations in the sample, we only consider individual accounts that are exclusively established based on local French GAAPs¹.

Results show that PRIV_SMEs engage in earnings management more frequently than PUB_SMEs in order to limit their apparent risk. They avoid reporting small losses and they smooth their incomes more intensively than PUB_SMEs. This evidence is in line with the hypothesis of a lender-oriented accounting policy for PRIV_SMEs. We also provide evidence that PUB_SMEs manage earnings upward more intensively than PRIV_SMEs. For such firms, market pressure to perform creates an incentive to artificially increase released earnings, which market regulation is not able to limit effectively. PUB_SMEs engage in such practices even if the related tax cost can be high. This evidence is in line with the hypothesis of a shareholder-oriented accounting policy for PUB_SMEs.

We believe the results are interesting for several reasons. Firstly, while previous studies focused individually on only one earnings management practice or considered overall earnings quality through an aggregated, univocal metric (Ball and Shivakumar, 2005; Coppens and Peeks, 2005; Burgstahler et al., 2006...), our study expands on this literature, providing a more complete picture that considers heterogeneity in earnings management practices associated with different goals: to reduce apparent risk, to appear to be performing better or to avoid taxes. Following Dechow et al. (2010), we promote complexity in accounting policy analysis.

Secondly, the current study provides evidence that contributes to the debate over how financial markets affect firms' reporting choices. We do it in a context where agency problems appear to be especially low, the SME context. This allows us to focus the analysis on accounting policies that create value for firms. It may be interesting for regulators and investors to consider such a context to go further than traditional corporate governance problems and to develop a more efficient use of SMEs' accounting information.

The rest of the paper is structured as follows. Section 2 develops the conceptual framework of earnings management, reviews literature on the topic related to SMEs and formalises our set of hypotheses. Section 3 describes the data and methodologies used in the study. Section 4 discusses the results. We conclude in section 5.

2 Literature and hypothesis

2.1 Earnings management theories and practice

Davidson et al. (1987) define earnings management as “the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a

desired level of reported income". To meet earnings objectives, managers can make marginal accounting decisions through accruals (depreciations, provisions and so on), or even manipulated real activities (Roychowdury, 2006). Here, we only focus on the first part of the alternative.

In the context of asymmetric information, these actions can be undertaken to mislead stakeholders (shareholders, lenders, governments etc.) or to communicate hidden information about the firm's future performance. Bergstresser and Philippon (2006) illustrate the first point. They report more intense earnings management via discretionary accruals in firms where the CEO's potential remuneration is tied more closely to the value of firm's shares. Ngo and Varela (2012) illustrate the second point. They provide evidence that income smoothing via discretionary accruals is perceived as a signal of good quality and reduces under-pricing in seasoned equity offering. The nature and level of earnings management fundamentally depends on the managers' goals and on external demand for quality financial reporting.

Dechow et al. (2010), in their review of earnings management proxies, consider six different types of determinants of earnings quality identified in accounting literature: firms' characteristics, the flexibility of accounting rules, corporate governance structures, auditing, capital market incentives and regulation. They point out that these determinants do not always affect the different measures of earnings management in the same way: abnormal accruals, earnings smoothness, achieving targets etc. For example, managerial ownership is associated with lower earnings quality by using asymmetric timeliness of loss recognition as the proxy, but with higher earnings quality by using discretionary accruals or investor responsiveness proxies.

In fact, the different measures are related to different constructs. They differ based on the type of mechanism involved and the resulting behaviour of net incomes. Firms can engage in earnings management to increase net incomes in order to appear to be performing better, to stabilise variability in earnings to appear less risky, or even, on the contrary, to decrease income to avoid taxes. In the first case, positive accruals can be a good proxy of earnings management. In the second, income smoothing metrics are better, and, in the last one, negative discretionary accruals are more appropriate.

2.2 *Earnings management in SMEs*

For SMEs, classic agency problems between managers and shareholders appear less relevant to explaining earnings management practices than for large firms. Concentration of control and proprietorship by the same individuals or within a family is more frequent in SMEs than in large firms (Ang et al., 2000). To study determinants of their accounting policy, we have to focus on other goals than managers' misconduct, largely documented by previous literature. We consider two of them: the motivation for SMEs to access bank credit and to reduce tax exposure. In a survey carried out on a sample of managers, owners and other people involved in producing accounting information in SMEs, Maingot and Zeghal (2006) provide evidence that, for these individuals, financial reporting is mostly carried out to satisfy loan and tax purposes.

Banks are the most important source of external finance for SMEs, but they have to deal with asymmetric information problems when they grant them credit. These problems are especially important because in loans, bank payoffs are defined at the beginning of the contract and cannot be changed. This generates a significant risk of asset substitution. To deal with these difficulties, banks use accounting information in two ways. First,

during negotiations, they process it to assess probability of financial distress and to decide how much to lend, and on what terms (Beaver et al., 2010). Then, during the term of the loan, they use it to monitor the borrower's performance and limit misconduct through covenants based on accounting figures (Chava and Roberts, 2008). However, SMEs can use earnings management techniques to appear less risky and access bank credit more easily. In particular, they may artificially increase their earnings to avoid small losses (Burgstahler and Dichev, 1997; Coppens and Peek, 2005) or engage in income-smoothing activities to make their activity's output more predictable (Eckel, 1981; Leuz et al., 2003). The metrics developed to measure this behaviour appear well suited to the study of earnings management in the context of SMEs.

In continental European accounting systems, more specifically in code-law countries like France, accounting information is highly involved in corporate income tax calculations (Ball et al., 2000). Firms' earnings have to undergo a few simple transformations to determine their tax base. As a result, they have clear incentives to use negative accruals (like provisions, depreciation and so on, which do not generate cash payments) to manage earnings downward to reduce their tax exposure. This increases a firm's capacity to self-finance growth and create greater shareholder value in the future. Numerous empirical studies conducted in many different countries provide evidence of accounting manipulation related to tax reduction (see Baralexis, 2004; in Greece; Coppens and Peek, 2005; in Belgium, Denmark, France, Germany, Italy, Netherland, Spain and the UK; Garrod et al., 2008; in Slovenia; Marques et al., 2011; in Portugal; Othman and Zeghel, 2006; France and Canada). Among earnings management metrics, negative discretionary accruals figures appear to be the most suitable when detecting this type of behaviour.

2.3 Listing status and earnings management

For an SME, being publicly traded introduces new incentives and constraints when producing accounting information, and therefore in earnings management practices.

On the one hand, more people are involved in processing and analysing a firm's financial information when their shares are publicly traded. Investors, financial analysts and market regulators monitor their financial reports and can sanction misconduct or bad performance through a low share price, selling recommendations or fines. In this context, demand for good quality information is high. This can limit a firm's incentives to manage earnings. Contrary to privately held firms, which can communicate with their shareholders via private channels because there are relatively few, publicly traded firms are restricted in their communication by financial market institutions (Burgstahler et al., 2006).

On the other hand, financial markets exert pressure on publicly traded firms to perform. Such pressure can encourage managers to engage in earnings management. Shares of firms presenting a steady and increasing earnings trend are valued more highly on the market than others (Myers et al., 2007). The same effect is observed for those beating analysts' forecasts on a regular basis (Bartov et al., 2002). On the other hand, companies underperforming forecasts see their share prices drop (De Angelo et al., 1996; Skinner and Sloan, 2002).

Table 1 The impact of firms' listing status on earnings quality

<i>Study</i>	<i>Country</i>	<i>Metrics</i>	<i>Findings</i>	<i>Impact of firm being listed on its earnings quality</i>
Beatty and Harris (1999)	USA (banks)	Realisation of securities gains and losses	Public banks consistently engage in more earnings management than private banks.	-
Beatty et al. (2002)	USA (banks)	Timeliness of loss recognition	Public banks report fewer small earnings decreases than private ones.	-
Van Der Bauwhede et al. (2003)	Belgium	Discretionary accruals	Income-decreasing earnings management is lower for publicly traded firms than for privately held firms.	+
Ball and Shivamakumar (2005)	UK	Timeliness of loss recognition	Timely loss recognition is less prevalent in private companies than in public companies	+
Coppens and Peeks (2005)	8 EE countries	Discontinuity in earnings distribution	Contrarily to publicly traded firms, privately held ones avoid reporting small losses but do not avoid reporting earnings decreases.	+/-
Burgstahler et al. (2006)	13 EU countries	Discontinuity in earnings distribution; total accruals; income smoothing; correlation between accrual and cash flows	Private firms exhibit higher levels of earnings management.	+
Goncharov and Zimmerman (2006)	Russia	Discontinuity in earnings distribution	Privately held firms report small losses in order to avoid taxes more frequently than publicly traded firms.	+

Table 1 The impact of firms' listing status on earnings quality (continued)

<i>Study</i>	<i>Country</i>	<i>Metrics</i>	<i>Findings</i>	<i>Impact of firm being listed on its earnings quality</i>
Kim and Yi (2006)	Korea	Discretionary accruals	The magnitude of discretionary accruals is greater for publicly traded firms than for privately held ones.	-
Arnedo et al. (2007)	Spain	Discretionary accruals	Higher levels of income-decreasing accruals are found for private companies. Higher levels of income increasing accruals are found for listed firms on the Spanish Ibex 35 index.	+/-
Peek et al. (2010)	13 UE countries	Timeliness of loss recognition	Public shareholders demand greater symmetric timeliness profit and loss recognition than private shareholders.	+
Givoly et al. (2010)	USA	Accrual persistence; accrual quality; conservatism; discontinuity in earnings distribution	Firms with publicly held equity have lower quality accruals, a higher propensity to manage income vis-à-vis earnings thresholds, and lower accruals persistence than do firms with privately held equity.	-
Ole-Kristian et al. (2013)	USA	Discretionary accruals		
Conditional conservatism	Public firms have higher accrual quality and are more conservative.	+		

In recent years, several studies have compared earnings management across privately and publicly held firms using different metrics but have not reached a consensus. Table 1 provides a summary of the main results of these works. It appears that the impact of being a public listed firm on the quality of its financial reporting depends on the proxy used to approach this quality. For example, Coppens and Peek (2005) report that publicly traded firms avoid reporting small losses less frequently than privately held ones, which is a sign of better quality published accounting information. But they also show that they avoid reporting decreases in earnings more frequently than privately held ones, which is a sign of the opposite. Based on this observation, we consider the question from a new perspective by studying differences in earnings management practices in light of differing goals related to their quotation status.

The first point that we consider is the propensity of SMEs to avoid reporting small losses. As we previously remarked, SMEs have incentives to manage earnings this way in order to appear less risky. This behaviour can facilitate or secure access to bank credit. However, being listed introduces other goals that can be more relevant to them. Many studies have documented that listed firms avoid reporting earnings below financial analysts' forecasts, or simply decreases in earnings (Degeorge et al., 1999; Payne and Robb, 2000; Moehrle, 2002). These types of behaviour are explained by the pressure to perform that is exerted by financial markets on publicly traded firms. As a result, these other goals can make avoiding reporting small losses less important for publicly traded SMEs than for privately held ones. Once primary goals are missed, secondary ones are no longer important. We build our first hypothesis (H1) on this. PUB_SMEs tend to fear being penalised by the market for underperformance more than a bank's mistrust due to small losses.

H1 Publicly traded SMEs use earnings management to avoid small losses less frequently than privately held ones.

The second point that we consider is the income-smoothing behaviour of SMEs. Since current earnings are used by external investors to predict a firm's future income, managers may engage in real actions or accounting actions in order to divert attention from excessively good or poor performance. These manipulations make the firm's performance over time smoother. The goal associated with this practice is to reduce the risk perceived by outside investors: banks or potential shareholders (Gebhardt et al., 2001). It also makes forecasting a firm's future net income easier for financial analysts (by banks for SMEs). Smooth, steady income appears more relevant for unlisted firms than for listed ones. For banks, accounting data are the main source of information on a privately held SME. It is therefore particularly relevant for SMEs to demonstrate as little risk as possible when they provide them with accounting information. For listed SMEs, accounting data are less crucial. Financial market monitoring is accomplished through many other complementary channels. Any relevant information is continuously considered and translated into its share price. We base our second hypothesis (H2) on this argument.

H2 Publicly traded SMEs smooth their income less intensively than privately held ones.

Finally, we consider SMEs' use of discretionary accruals. As we previously pointed out, SMEs have incentives to exploit flexibility in accruals in order to reduce their tax exposure. Consequently, this behaviour decreases the amount of income released. For publicly traded firms, such results challenge the objective of fulfilling financial markets' demand for performance. The use of income-decreasing discretionary accruals then appears particularly costly to them, so they will avoid releasing under-performing accounts. On the other hand, they have incentives to exploit accruals flexibility in order to maximise their net income, not shared by privately held firms. Such accounting manipulations can help them satisfy financial markets' demand for performance. Moreover, in a context of information asymmetry, the operation can be used as a signal of good future performance. This signal cannot be imitated in the long run by bad poorly performing companies because of the tax cost that income-increasing accruals involve. We base our last hypothesis (H3a and H3b) on these arguments.

H3a Publicly traded SMEs manage earnings upward more intensively than privately held ones.

H3b Privately held SMEs manage earnings downward more intensively than publicly traded ones.

3 Data and methodology

3.1 Sample description

Our primary data are from the Altares² database. We first exclude firms that do not meet the E.U. definition of an SME. The remainder of companies employ between 20 and 250 people, and generate a turnover of €2 to €50 million or have €2 to €43 million in total assets. Then, in order to assure the consistency of firms' accounting obligations in our sample, we have only retained the largest ones: those that are head of a group have to publish consolidated accounts and have their accounts certified by two different auditors.

We end up with a sample of 925 SMEs: 245 PUB_SME and 680 PRIV_SMEs. Firms' accounting behaviour is observed between 2002 and 2010. After removing inconsistent data, this allows us to consider 3682 observations.

Following Marques et al. (2011), we focus on firms' individual accounts established using local French GAAPs. This narrower field should highlight earnings management more easily. Shuto (2009), in a study on Japan's publicly traded firms, provides evidence that these practices are stronger in parent-firm's individual accounts than in consolidated accounts.

Table 2 provides summary statistics for the resulting sample. PUB_SMEs are larger, less profitable and less leveraged than PRIV_SMEs but are not significantly older or younger (see panel A). The most represented industry sectors in the sample, together representing approximately half, are wholesale, retail and business services. Manufacturing sectors are underrepresented (only 17%). About 2% of the firms do not provide enough information to identify their sector (see panel B).

Table 2 Summary statistics

<i>Panel A: Firm characteristics</i>					
	<i>Mean</i>	<i>Median</i>	<i>Std. dev.</i>	<i>Min.</i>	<i>Max.</i>
<i>Public firms</i>					
Total assets*	437,010	31,898	1,722,770	244	23,630,000
Turnover*	16,520	11,443	22,977.2	0	501,562
No. of employees	79.18	59	54.97	20	249
Age	22.92	19	14.77	3	113
Debts/ tot. assets	0.426	0.416	0.223	0	2.465
Op. income/tot. assets	0.018	0.005	0.105	-0.622	0.526
Net income/tot. assets	0.015	0.031	0.123	-0.589	0.398
<i>Private firms</i>					
Total assets*	55,962	19,448	235,085	44	6,558,000
Turnover*	22,538	13,787	37,966	0	851,053
No. of employees	81.55	56	60.03	20	249
Age	24.09	20	16.82	1	106
Debts/ tot. assets	0.513	0.515	0.236	0	2.505
Op. income/tot. assets	0.028	0.022	0.101	-1.050	0.581
Net income/tot. assets	0.042	0.038	0.103	-0.621	0.396

Note: *In thousands of Euro

<i>Panel B: Industry breakdown</i>		
	<i>No. of firms</i>	<i>Percent of firms</i>
Manufacturing, primary transformation	62	6.70
Manufacturing, secondary transformation	84	9.08
Others manufacturing activities	22	2.37
Wholesale and retail	226	24.43
Transport, hospitality and catering	65	7.02
Communications, finance and real-estate	193	20.86
Business services	225	24.32
Health	20	2.16
Personal services and leisure activities	12	1.29
Missing values	16	1.72

3.2 Test specifications and description of variables

3.2.1 Earnings distribution

To challenge H1, we have generated two histograms of firms' earnings: one for PUB_SMEs, another for PRIV_SMEs. We then compare their characteristics around the threshold zero. The retained earnings figure is the ratio of firms' net income in time t to its total asset in time $t - 1$. We use an interval width of 0.5% to generate the histograms.

Consequently, small losses are defined as a ratio value of -0.5% and small gains as a ratio value of 0.5% .

H1 implies the presence of an irregularity around zero materialised by a lower frequency of small losses and a higher frequency of small gains than usual. This irregularity is usually explained by firms managing earnings in order to avoid reporting small losses. The phenomenon should be more frequent for PRIV_SMEs than for PUB_SMEs.

To formally test this prediction, we use statistical indicators of the length of the irregularity and test them against zero (the absence of irregularity). The indicators are built on the same pattern based on the following ratio:

$$Irregularity = \frac{actual\ frequency^* - theoretical\ frequency^*}{theoretical\ frequency^*} \quad (1)$$

* of small losses or small gains depending on the part of the irregularity that we consider.

In order to estimate the theoretical frequencies, we use four different models. Firstly, following Burgstahler and Dichev (1997), we use the arithmetic mean of class's frequencies immediately before the considered part of the irregularity and its following class. Secondly, we use two measures proposed by Dechow et al. (2003) based respectively on linear and exponential approximation that we estimate using the frequencies observed on the four classes before and the four classes after the considered part of the irregularity. Finally, following Vidal (2008), we use a logarithmical approximation in the same way. These different methods help us to deal with the shape of the irregularity environment which can be more or less concave, convex or even flat.

3.2.2 *Income smoothing and discretionary accruals*

For H2, H3a and H3b, we use a common protocol. We regress a measure of earnings quality (an income-smoothing indicator or an estimation of discretionary accruals) on a variable called Public and a set of controls. Public takes the value of one if the SME is publicly traded and zero otherwise. The controls are the firm's size, leverage ratio, growth rate, operational performance, industry sectors and, depending on the timeframe of the explained variable, dummy years. We estimate the following specification using OLS on a cross section of aggregated data to test H2³ and on data panel to test H3a and H3b.

$$Earnings\ Quality_i = \alpha + \beta_1 Public_i + \beta_2 Size_i + \beta_3 Lev_i + \beta_4 Growth_i + \beta_5 Perf_i + \beta_6 Sect_i + \beta_7 Year_i + \varepsilon_i \quad (2)$$

Size is measured by the natural logarithm of the firm's total assets. Leverage is measured by the firm's total debt to total assets ratio. Growth is defined as the firm's total assets growth rate. Performance is measured by the firm's ROA. The sectoral dummies are coded based on the first two digits of the NAF2 INSEE classification.

Our first set of explained variables focuses on the firm's income smoothing behaviour. We consider two complementary metrics. Following Leuz et al. (2003), we use the ratio of the firm's operating incomes' standard deviation standardised by their total assets over their operating cash flows' standard deviation also standardised by their total assets. Similarly, we use Lang et al.'s (2006) income-smoothing indicator which substitutes net income with operating income in the first metric. Both of them are inverse

proxies of earnings quality. An income variability lower than the cash flow variability is interpreted as evidence of income smoothing. Hence, we expect to find a positive relationship between Public and the two indicators, meaning that PUB_SMEs smooth their incomes less intensively than PRIV_SMEs.

Our second set of explained variables focuses on accounting manipulations of earnings through accruals. We estimate two different metrics of discretionary accruals: the classic Jones' (1991) metric, and its growth proposed by Dechow et al. (2003). We regress firms' total accruals standardised by their size on a set of variables related to the growth in their level of activity and the value of their fixed assets. We then use regression residuals' absolute value as a measure of a firm's discretionary accruals. Total accruals are computed as the difference between operating cash flows and income before extraordinary items and taxes. All the variables in the accrual models are standardised by the gross value of firms' total assets.

The Jones (1991) discretionary accruals metric is estimated based on the residuals of the following model:

$$Total\ accruals_{it} = \alpha + \beta_1 (\Delta Sales_{it} - \Delta REC_{it}) + \beta_2 PPE_{it} + \varepsilon_{it} \quad (3)$$

where $\Delta Sales_{it}$ is the change in total sales between year $t - 1$ and t , ΔREC_{it} the change in accounts receivable over the same period, and PPE_{it} is the gross value of firms' property, plant and equipment.

To generate the Dechow et al. (2003) metric, we adjust the previous model in order to control the relationship between changes in total sales and accounts receivable. We estimate k as the adjustment factor regressing ΔREC_{it} on $\Delta Sales_{it}$ for each two-digit industry sector. We also add the one year lagged value of total accruals, $lagTA_{it}$, to take into account the fact that accruals are less persistent than cash flows and reverse over time. We also add the expected growth estimated through the one year lead-value of growth in total sales, $Exp.Gro_{it}$. This way, we distinguish an increase in stock associated with accounting manipulations from the result of firm's future increase in sales' anticipation. We finally estimate the following model on a reduced number of observations (2,723) because of lead and lagged variables:

$$Total\ accruals_{it} = \alpha + \beta_1 ((1+k)\Delta Sales_{it} - \Delta REC_{it}) + \beta_2 PPE_{it} + \beta_3 lagTA_{it} + \beta_4 Exp.Gro_{it} + \varepsilon_{it} \quad (4)$$

Both total-accrual models are estimated on a cross section each year and for each industry sector according to the first two digits of the NAF2 INSEE classification.

The absolute value of residuals from total accruals regressions is our measure of the intensity of firms' earnings management through discretionary accruals. It represents the accruals that are not explained by industry practice and firms' observable characteristics.

Our hypotheses are related to the propensity of certain types of SME to more intensively manage earnings upward in order to appear to be performing better, or downward to avoid taxes. In order to test them, we estimate equation (2) alternatively on the subsample of observations in which we have found income-increasing discretionary accruals (positive residuals of the accrual model), and then on the subsample of observations in which we have found income-decreasing discretionary accruals (negative residuals of the accrual model). We expect to find a positive coefficient for Public for firms that manage their income upward and a negative one for those that manage their income downward. This result would be in line with both the hypothesis of earnings

management motivated by stock market pressure for performance for PUB_SMEs (H3a) and the hypothesis of earnings management motivated by the desire of PRIV_SMEs to avoid income taxes (H3b).

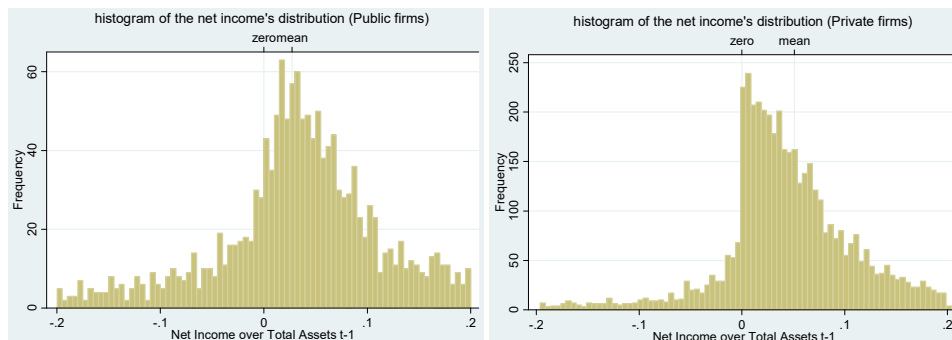
The different tests associated with the regression coefficients in our estimation of equation (2) are conducted following White's robust heteroscedasticity method.

4 Results and discussion

4.1 Earnings distribution analysis

Figure 1 displays the histograms of standardised SMEs earnings. Because we focus on frequency of earnings around zero, the range of values considered is limited to net incomes included between -20% and $+20\%$ of the firms' year $t - 1$ total assets. The two distributions clearly appear different from one another with a highly pronounced irregularity around zero for PRIV_SMEs and no clear evidence of such irregularity for PUB_SMEs. Even if the frequency of small losses (an income ratio between -0.5% and 0%) is similar in both cases (around 1.4% of the observations), the frequency of small gains (an income ratio between 0% and $+0.5\%$) is higher for PRIV_SMEs than for PUB_SMEs (4.3% of the observations for the first compared to only 2.4% for the second).

Figure 1 Histograms of SMEs' net income to total assets ratio (see online version for colours)



Statistical analyses of the irregularity are shown in Table 3. The results unambiguously confirm these differences. The ratio of empirical frequency of small losses over theoretical frequency is only different from zero for the subgroup of PRIV_SMEs. This result is robust for most of the different estimation methods that we use. Around 40% of small loss observations fail to reach their theoretical frequency. We find the same kind of evidence with small gains. The ratio of frequencies is only significantly different from zero for PRIV_SMEs. It appears that there is an excess of between 65% and 142% of small gains' observations relative to their estimated theoretical frequencies. This evidence is clearly in line with H1. PRIV_SMEs avoid reporting small losses but PUB_SMEs do not.

Table 3 Statistical analysis of earnings distribution irregularity around zero

Method	Public firms				Private firms			
	Empirical frequencies	Theoretical frequencies	Irregularity ratio	z test	Empirical frequencies	Theoretical frequencies	Irregularity ratio	z test
Small losses								
Arithmetic mean	27	36	-0.250	-1.35	82	153	-0.464	-5.73***
Linear approximation	27	33.62	-0.197	-1.00	82	134	-0.388	-4.19***
Exponential approximation	27	30.06	-0.101	-0.46	82	95.71	-0.143	-1.10
Logarithmical approximation	27	37.55	-0.281	-1.59	82	157.06	-0.477	-6.06***
Small gains								
Arithmetic mean	44	39.50	0.1139	0.59	252	242.5	0.0391	0.53
Linear approximation	44	35.50	0.2394	1.11	252	132.25	0.9054	6.74***
Exponential approximation	44	32.29	0.3624	1.53	252	103.80	1.4277	8.34***
Logarithmical approximation	44	39.36	0.1176	0.60	252	152.65	0.6508	5.59***

Notes: This table shows statistics on earnings' distribution anomalies around the threshold zero. It considers both sides of the threshold: the small losses which correspond to a value of the ratio of net income in year t to total assets in $t-1$ included between -0.5% and 0%, and the small gains which correspond to a value included between 0% and 0.5%. *, **, *** indicates a significance level of 10%, 5% and 1%, respectively.

The same conclusions can be reached in the time series. We have computed Glaum et al.'s (2004) asymmetry indicator on a yearly basis and estimated a statistical test of difference in mean between the groups of PRIV_SMEs and PUB_SMEs. The indicator consists in the difference between the frequency of small gains and frequency of small losses over their sum ratio. A positive value shows that the considered range of earnings values (small gains and small losses) is on the increasing side of the distribution. Here as a result, the higher the indicator is, the more pronounced the irregularity around zero. Its average value for PUB_SMEs is only 21% compared to 48% for PRIV_SMEs. This difference is significant at 10%.

4.2 Income-smoothing analysis

Our two income smoothing indicators rely on the same intuition: incomes that vary less than the level of activity indicate that firms act to stabilise their apparent performance. As a result, an incomes' standard deviation to cash flow's standard deviation ratio lower than 1 can be interpreted as an evidence of income smoothing.

Table 4 Descriptive statistics for income-smoothing analysis

<i>Panel A: Average values of variables</i>			
	<i>Publicly traded SMEs</i>	<i>Privately held SMEs</i>	<i>t-tests</i>
Std. dev. op. cash flows	0.22 (1.26)	0.12 (0.11)	2.181**
Std. dev. op. incomes	0.05 (0.06)	0.04 (0.05)	2.851***
Std. dev. net incomes	0.09 (0.06)	0.06 (0.05)	5.904***
Leuz et al.	0.57 (0.90)	0.46 (0.55)	2.1021**
Lang et al.	0.85 (0.88)	0.62 (0.68)	3.723***
Size	10.85 (1.84)	10.02 (1.04)	8.097***
Leverage	0.44 (0.18)	0.50 (0.20)	3.452***
Growth	1.50 (12.87)	0.37 (4.14)	1.991**
ROA	0.01 (0.07)	0.02 (0.08)	1.855*

Notes: This table shows the results of a set of tests of differences in means between the two groups of publicly traded SMEs and privately held ones for our different variables. It provides average values of the variables, their standard deviation (in brackets) for the two groups and the Student t statistics for the related test. *, **, *** indicates a significance level of 10%, 5% and 1%, respectively.

Table 4 Descriptive statistics for income-smoothing analysis (continued)

<i>Panel B: Correlation matrix</i>						
	<i>Leuz et al.</i>	<i>Lang et al.</i>	<i>Size</i>	<i>Leverage</i>	<i>Growth</i>	<i>ROA</i>
ROA	0.017	-0.128***	-0.088***	-0.010	-0.031***	1
Growth	0.019*	-0.008	0.072***	-0.056***	1	
Leverage	-0.022*	-0.189***	-0.146***	1		
Size	-0.242***	-0.039***	1			
Lang et al.	0.582***	1				
Leuz et al.	1					

Notes: This table shows the pairwise Pearson correlation coefficients for the variables used in the income smoothing analysis. *, **, *** indicates respectively a significance level of 10%, 5% and 1%.

Table 4 shows descriptive statistics related to income-smoothing analysis. Panel A shows that the average values of the two income-smoothing indicators are lower than 1 for the two groups of firms. Both categories of SMEs smooth incomes but PRIV_SMEs appear to smooth them more intensively than PUB_SMEs. Operating income's standard deviation represents on average 4% of the operating cash flows' standard deviation in the private firms' subgroup versus 5% in the public firms' subgroup. The same kind of difference can be found with net incomes' standard deviation: 6% versus 9%. Those differences are significant at the level of 1%. Regarding controls, we notice that PUB_SMEs are on average larger, less leveraged, grow faster and don't perform as well as PRIV_SMEs over the total period studied.

Panel B shows correlation analysis for the variables used in the test model estimation [equation (2)]. We notice that both Leuz et al.'s and Lang et al.'s indicators are positively and significantly correlated with Pearson's coefficient of 58.2%. They measure close content. The second one is the first one adjusted for smoothing based on no operating income.

Bivariate analysis provides evidence in line with H2. The multivariate analysis shown in Table 5 reinforces this conclusion. PUB_SMEs smooth their incomes less intensively (operating and net incomes) than PRIV_SMEs. Leuz et al.'s income smoothing indicator is on average 10.7 percentage points higher for public firms than for private ones, while Lang et al.'s indicator is on average 13.3 percentage points higher. These facts are consistent with Burgstahler et al.'s (2006) conclusion about earnings management among private and public firms in 13 different European countries. They reinforce our conclusion that the accounting policy of SMEs is more debt-oriented when they are privately held than when they are publicly traded. They avoid reporting small losses and they smooth their incomes more actively than PUB_SMEs to appear less risky.

Table 5 Income-smoothing analysis

	<i>Leuz et al. indicator</i>	<i>Lang et al. indicator</i>
Constant	1.197*** (0.164)	1.241*** (0.330)
Public firm	0.107** (0.053)	0.133** (0.065)
Size	-0.086*** (0.014)	-0.029 (0.025)
Leverage	-0.090 (0.086)	-0.555*** (0.139)
Growth	0.004 (0.004)	-0.0004 (0.004)
ROA	-0.248 (0.405)	-1.421*** (0.353)
Industry controls	yes	yes
Fisher test	4.40***	2.18***
R ²	0.217	0.162
No. obs.	907	907

Note: *, **, *** indicates respectively a significance level of 10%, 5% and 1%, respectively.

4.3 Discretionary accruals analysis

Table 6 shows descriptive information about the variables used in our discretionary accruals analysis. Panel A shows that, whatever the metrics used, the absolute value of discretionary accruals – the intensity of earnings management – is on average higher for PUB_SMEs than for PRIV_SMEs. As for the other variables, the evidence does not differ from those previously discussed in the sample description. We also notice, in panel B, that our two metrics of discretionary accruals are highly correlated. They measure the same construct. Furthermore, they are both correlated with the same elements: positively with leverage and negatively with ROA.

The multivariate analysis, shown in Table 7, confirms that PUB_SMEs manage earnings more intensively than PRIV_SMEs. The coefficient for Public is positive and significant at 1% for the two metrics. However, this first result says nothing about why these SMEs manage earnings. To go further, we consider income-increasing discretionary accruals and income-decreasing ones alternatively. Greater use of income-increasing discretionary accruals by PUB_SMEs (a positive coefficient for Public) would be in line with H3a. It is clearly a way for these firms to deal with market pressure to perform. A lower use of income-decreasing discretionary accruals by PUB_SMEs (a negative coefficient for Public) would be in line with H3b. Negative accruals reduce firms' tax exposure. PRIV_SMEs would be more sensitive to tax exposure while PUB_SMEs would be more focused on share price.

Table 6 Descriptive statistics for discretionary accruals analysis

<i>Panel A: Average values of variables</i>			
	<i>Publicly traded SMEs</i>	<i>Privately held SMEs</i>	<i>t-test</i>
Jones	-0.0008 (0.120)	0.0024 (0.112)	0.740
Abs. Jones	0.082 (0.086)	0.076 (0.825)	2.037**
Dechow	0.004 (0.116)	-0.001 (0.107)	1.110
Abs. Dechow	0.080 (0.085)	0.073 (0.077)	1.787*
Size	11.03 (1.95)	9.99 (1.19)	17.367***
Leverage	0.42 (0.22)	0.51 (0.23)	13.181***
Growth	1.77 (43.58)	0.28 (5.98)	1.115
ROA	0.01 (0.09)	0.02 (0.08)	3.687***

Notes: This table shows the results of a set of tests of differences in means between the two groups of publicly traded SMEs and privately held ones for our different variables. It provides average values of the variables, their standard deviation (in brackets) for the two groups and the Student t statistics for the related test. *, **, *** indicates a significance level of 10%, 5% and 1%, respectively.

<i>Panel B: Correlation matrix</i>								
	<i>Jones</i>	<i>Abs Jones</i>	<i>Dechow</i>	<i>Abs. Dechow</i>	<i>Size</i>	<i>Leverage</i>	<i>Growth</i>	<i>ROA</i>
ROA	0.228***	-0.049**	0.206***	-0.065***	-0.121***	-0.034**	-0.0169	1
Growth	-0.000	0.028*	0.012	-0.002	0.025*	-0.029**	1	
Leverage	-0.019	0.068***	-0.020	0.067***	-0.096***	1		
Size	-0.013	-0.017	0.010	0.007	1			
Abs. Dechow	0.005	0.911***	0.006	1				
Dechow	0.934***	-0.008	1					
Abs. Jones	-0.005	1						
Jones	1							

Notes: This table shows the pairwise Pearson correlation coefficients for the variables used in the discretionary accruals analysis. *, **, *** indicates a significance level of 10%, 5% and 1%, respectively.

Table 7 Discretionary accruals analysis

	Abs. value of discretionary disc. accruals		Incomes increasing disc. accruals		Abs. value of incomes decreasing disc. accruals	
	Jones	Dechow	Jones	Dechow	Jones	Dechow
Constant	0.0683*** (0.0136)	0.0575*** (0.0151)	0.0573*** (0.0206)	0.0282 (0.0236)	0.0532*** (0.0188)	0.0710*** (0.0200)
Public firm	0.0116*** (0.0036)	0.0118*** (0.0039)	0.0137*** (0.0049)	0.0170*** (0.0053)	0.0053 (0.0051)	0.0043 (0.0055)
Size	-0.0039*** (0.0012)	-0.0025* (0.0014)	-0.0047** (0.0020)	-0.0011 (0.0023)	-0.0015 (0.0016)	-0.0033* (0.0018)
Leverage	0.0310*** (0.0080)	0.0296*** (0.0087)	0.0326*** (0.0109)	0.0291** (0.0118)	0.0338*** (0.0107)	0.0345*** (0.0114)
Growth	0.0005*** (0.0001)	-0.0000 (0.0001)	0.0022* (0.0011)	0.0010 (0.0010)	0.0000 (0.0001)	-0.0005*** (0.0001)
ROA	-0.0319 (0.0335)	-0.0433 (0.0382)	0.1179*** (0.0310)	0.0910*** (0.0251)	-0.1925*** (0.0482)	-0.2052*** (0.0586)
Industry controls	Yes	Yes	Yes	Yes	Yes	Yes
Years fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Fisher test	3.77***	3.86***	3.38***	3.39***	2.41***	2.75***
R ²	0.0278	0.033	0.051	0.044	0.062	0.083
No. of obs.	3,682	2,723	1,833	1,342	1,849	1,381

Notes: This table shows OLS estimations of equation (2) for the full sample and for subsamples of observations corresponding alternatively to the use of income-increasing discretionary accruals and to the use of income-decreasing accruals. The earnings quality metrics used is the absolute value of discretionary accruals estimated alternatively following the Jones' (1991) model [see equation (3)] and the Dechow et al.'s (2003) model [see equation (4)]. For each explanatory variable, we show the value of the regression coefficient and the standard deviation associated with this coefficient (in brackets). *, **, *** indicates a significance level of 10%, 5% and 1%, respectively.

Table 8 Discretionary accruals analysis for profitable firms

	Abs. value of discretionary disc. accruals		Incomes increasing disc. accruals		Abs. value of incomes decreasing disc. accruals	
	Jones	Dechow	Jones	Dechow	Jones	Dechow
Constant	0.0613*** (0.0169)	0.0623*** (0.0188)	0.0467** (0.0226)	0.0375 (0.0275)	0.0790*** (0.0224)	0.0945*** (0.0249)
Public firm	0.0096** (0.0042)	0.0123*** (0.0047)	0.0117** (0.0054)	0.0157*** (0.0060)	0.0048 (0.0062)	0.0071 (0.0068)
Size	-0.0035** (0.0015)	-0.0030* (0.0017)	-0.0043* (0.0022)	-0.0017 (0.0027)	-0.0031 (0.0019)	-0.0046** (0.0022)
Leverage	0.0285*** (0.0095)	0.0310*** (0.0104)	0.0366*** (0.0123)	0.0278** (0.0141)	0.0216* (0.0123)	0.0321** (0.0130)
Growth	0.0007 (0.0012)	0.0004 (0.0010)	0.0045* (0.0025)	0.0037* (0.0020)	-0.0011** (0.0005)	-0.0010** (0.0004)
ROA	0.0429 (0.0573)	-0.0166 (0.0616)	0.1648*** (0.0339)	0.0857** (0.0345)	-0.1979* (0.1024)	-0.2060* (0.1078)
Industry controls	Yes	Yes	Yes	Yes	Yes	Yes
Years fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Fisher test	2.62***	3.20***	3.78***	2.62***	1.30	2.28***
R ²	0.026	0.030	0.065	0.040	0.045	0.073
No. of obs.	3,053	2,278	1,612	1,184	1,441	1,094

Notes: This table shows, as in the previous one, the OLS estimation of equation (2) for the absolute value of discretionary accruals income, the absolute value of income-increasing discretionary accruals and the absolute value of income-decreasing discretionary accruals considering the two accruals metrics (Jones, 1991; Dechow et al., 2003) but only on the subsample of profitable firms. For each explanatory variable, we show the value of the regression coefficient and the standard deviation associated with this coefficient (in brackets). *, **, *** indicates respectively a significance level of 10%, 5% and 1%, respectively.

Results shown in columns 3 and 4 are in line with H3a. The coefficient associated with Public is positive and significant at 1% for the two metrics. When they manage earnings upward⁴, PUB_SMEs do it more intensively than PRIV_SMEs. Positive discretionary accruals (with Jones' model) are on average 1.37 percentage points higher for PUB_SMEs than for PRIV_SMEs (1.7% with Dechow et al.'s model). The incentives to use positive accruals generated by the stock markets' pressure to perform appear more important to determine French SMEs' accounting policies than regulation, which fundamentally discourages the use of any discretionary accruals.

These results are consistent with the evidence provided by Arnedao et al. (2007) of more intense earnings management practices by firms that are part of the IBEX index than by other Spanish firms. But it is also in opposition to Ole-Kristian et al. (2013) which show less earnings management from publicly traded firms than from privately held ones in the USA. We attribute these proximities and differences to less efficient financial market regulation in continental European systems than in the USA.

In the last two columns of Table 7, we perform tests on income-decreasing discretionary accruals. We do not find any significant differences between PUB_SMEs and PRIV_SMEs. The coefficient associated with Public is not statistically different from zero for our two metrics. We then reject H3b. PRIV_SMEs do not manage earnings downward more intensively than PUB_SMEs.

Things appear more complex. If both categories of SMEs have the same incentives to manage earnings to avoid taxes, privately held ones manage earnings upward less intensively than publicly held ones but they do not act differently when they manage earnings downward.

In order to ascertain these last conclusions, we extend the analysis, focusing on the subsample of profitable firms. Doing so, we limit the possibility that firms manage earnings upward simply to appear less risky. Furthermore, in such a context, each use of discretionary accruals to manage earnings downward clearly reduces a firm's tax exposure at the expense of apparent better performance. Related estimations are shown in Table 8. The results are similar to the previous ones. PUB_SMEs manage their earnings more intensively through accruals than PRIV_SMEs. This difference is explained by a more intensive use of discretionary accruals to manage incomes upward by PUB_SMEs than by PRIV_SMEs. We do not find any evidence of a difference in behaviour between our two categories of SMEs when considering income-decreasing discretionary accruals either. We still reject H3b. However, this evidence is in line with the hypothesis of more shareholder-oriented accounting policies for PUB_SMEs than for PRIV_SMEs.

5 Conclusions

This study examines correlations between an SME being publicly traded and three types of earnings management practices: the avoidance of small losses, income smoothing and the use of discretionary accruals. Considering that determinants of earnings quality can be different among the various metrics used to measure it, we consider different theoretical backgrounds to provide evidence of these relationships. Each metric corresponds to a different way of managing earnings and each way is implemented by firms to achieve different objectives. For SMEs, we identify three main ones. The first is to reduce income variability to appear less risky. This allows for a better access to external finance such as bank loans etc. The second is to maximise apparent performance

to increase shareholder wealth through higher dividend yields and higher share prices. Conversely, the third is to minimise tax exposure. Being publicly traded for an SME changes incentives related to these goals. We predict that, as PUB_SMEs have to deal with other, harder earnings targets, like analyst forecasts, they are less likely to engage in earnings management to avoid small losses. When the main target is missed, meeting the other target – avoiding small losses to appear less risky – is less crucial. We also predict that, because traditional bank loans are less important for listed firms' external financing, being more focused on share' price, PUB_SMEs will smooth earnings less intensively than PRIV_SMEs. Finally, we predict that, due to market pressure to perform, PUB_SMEs are more likely to use discretionary accruals to increase their reported earnings' than PRIV_SMEs, which are more focused on reducing tax exposure.

Using a sample of 245 PUB_SMEs and 680 PRIV_SMEs observed during the period 2002-2010, we first document evidence that PRIV_SMEs engage in earnings management to appear less risky more frequently than PUB_SMEs. Specifically, we find that they act to avoid small losses and practice more intensive income smoothing more frequently. We then provide evidence that PUB_SMEs manage earnings upward more intensively than PRIV_SMEs. Overall, the evidence is in line with accounting policies being more lender-oriented for PRIV_SMEs and more shareholder-oriented for PUB_SMEs.

Our findings are robust compared to alternative measures of each earnings management practice considered. We use four different methods estimating net income distribution irregularity around zero. We also use two measures of income smoothing intensity: the Leuz et al.'s (2003) indicator based on operating income and the Lang et al. (2006) indicator based on net income. We finally use two different models to estimate discretionary accruals: the classic Jones (1991) model and its evolution proposed by Dechow et al. (2003).

These findings are subject, however, to limitations. Firstly, in our study, we document that earnings management is more intense for PRIV_SMEs when it helps to reduce apparent risk and for PUB_SMEs when it helps to improve apparent performance. To do so, we associate different earnings-quality metrics with different firms' objectives, but we only consider three metrics among many. Others, like accruals quality (Dechow and Dichev, 2002), timely loss recognition (Basu, 1997), earnings persistence (Sloan, 1996) or the desire to beat another earnings target to avoid reporting lower earnings, for example (Moehrle, 2002) etc. may provide more information about the relationship between SMEs earnings management and stock markets. Secondly, we only compare PUB_SMEs with PRIV_SMEs. We do not provide any evidence that the behaviour that we highlight is or not specific to SMEs. Including large firms in the analysis (publicly traded or not) could allow us to make the distinction. Building on this study, future research could extend the investigation using both a broader sample and different earnings quality metrics.

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Notes

- 1 Since January 2005, in France, publicly traded firms have had to adopt International Financial Report Standard (IFRS) for their consolidated accounts.
- 2 Altares is an accounting database covering about one million French firms over a rolling ten years period. It is edited by Dun and Bradstreet and distributed by IODS (48, rue de Provence, 75009 Paris).
- 3 Here, the specification excludes the vector of dummy variables indicating the year of data measurement.
- 4 We notice that there are no significant differences between publicly traded firms or privately held ones in term of the probability of managing earnings upward or downward. This result, not reported in the paper, is accurate both for profitable firms and unprofitable ones. Both bivariate and logit regression analyses end in the absence of differences.