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Earnings Management and IPOS – Evidence from Finland

ABSTRACT

This paper studies the presence of earnings management in initial public offerings (IPOs) of Finnish firms. When the aim of earnings management is to increase the attractiveness of the offered shares it needs to go undetected by market participants. This invisibility makes earnings management difficult to detect from the income statement and the balance sheet, thus investors would benefit from other information that reveals the probability of earnings management. Managers' and owners' incentives to manage earnings are used to assess the likelihood that earnings management is used before the IPO. Earnings management is tested by observing time-series profiles of accruals. The sample consists of 56 firms that went public in the years 1994 to 2000 on the Helsinki Stock Exchange. The results suggest that IPO firms where the largest owners are physical persons (entrepreneurs) are more likely to use earnings management than firms that are institutionally owned. Because of the small sample size the results should be interpreted with some caution.

***Key words**: Earnings management, initial public offering, accruals, ownership structure*

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1. INTRODUCTION

Managers possess a combination of incentives and possibilities to manage earnings before an initial public offering (IPO). Several studies have documented the presence of earnings management in IPO firms (e.g. Friedlan, 1994, Teoh, Welch and Wong, 1998 and Aharony, Lee and Wong, 2000). Research results show variation in the magnitude of firms' earnings management ranging from very aggressive to no earnings management at all. The fact that IPO firms are not equal in regard to earnings management can be observed also from the discussion in the popular press where only a part of the IPO firms have been under suspicion. The main task of this paper is to examine whether the ownership type of IPO firms is associated with their propensity for earnings management behaviour.

For earnings management to successfully increase the attractiveness of an IPO it needs to go undetected by market participants, making its presence difficult to detect. Investors have high incentives to identify it however, because IPO firms which use earnings management are poor investments (Teoh, Welch and Wong, 1998). As earnings management is difficult to observe directly from the income statement or balance sheet, information that help to assess its probability would be beneficial to the investment decision. For example, Aharony, Lee and Wong (2000) found that the earnings management likelihood in Chinese IPO firms varied across industries and listing locations. They suggest the noted difference in opportunistic behaviour to be a result of managers' incentives to manage earnings and their possibilities to do it without detection.

Besides the direct connection to the earnings management literature, this paper is related the previous studies investigating and predicting the performance of IPO firms (e.g. Brav and Gompers, 1997, Hensler, Rutherford and Springer, 1997, Jain and Kini, 2000 and Bhabra and Pettway, 2003). To summarize, in these papers, lack of venture capital backing, young age, small size and a high price-to-book ratio, are found to be positively correlated with poor performance in the aftermarket. And these factors, in turn, are connected to high ownership by individuals. Brav and Gomper's (1997) suggestion, that high ownership by physical persons is connected to weak performance, is especially relevant to this study.

Moving beyond the current literature, this paper specifically argues that IPO firms held by individuals are weaker performers because they are more likely to manage earnings before the IPO than firms that are institutionally held. In the spirit of Aharony, Lee and Wong (2000) the difference in the probability of engaging in earnings management in IPO firms is explained by managers' incentives. Entrepreneurs are assumed to have more incentives to manage earnings than the institutional owners because they have more to gain and less to loose from this activity. Furthermore, entrepreneurs' incentives for earnings management should increase the more the owners give up their ownership in the IPO.

Empirical tests are conducted on a sample of 56 firms that went public on the Helsinki Stock Exchange between the beginning of 1994 and the end of 2000. Following the previous research, evidence of earnings management is sought by observing accruals. Accruals are calculated as the differences in working capital both with and without the depreciation accrual. In addition to the total sample, accruals are examined separately for the 22 entrepreneur firms and the 34 institutionally held firms. The main results are based on discretionary accruals estimated with the modified DeAngelo model and are examined for five periods surrounding the IPO year. Intuitively, the results obtained in this study should be applicable on other IPO firms in developed markets.

The results show only limited evidence of earnings management in the total sample. Separate analysis of the entrepreneur and institutionally owned firms demonstrates that earnings management is limited to the sub-group of the entrepreneur firms. The institutional owned firms do not appear to manage earnings before the IPO. The evidence thus supports the argument that earnings management behavior depends on who owns the IPO firm. However, no connection between the level of earnings management and the amount of ownership given up by old owners in the IPO could be found. The noted difference in earnings management behaviour between entrepreneur and institutionally owned IPO firms should be used in assessing the reliability of the IPO firms' financial statements.

The remainder of the paper is organized as follows. Related research and the hypotheses are presented in the next section. The sample and method are presented in section 3 whereas the empirical analysis is in section 4. Section 5 concludes the paper.

2. IPOS AND EARNINGS MANAGEMENT

IPOs are priced by discounting the company's future cash flows and by observing the market values of similar publicly traded companies. At the time of their IPOs issuing companies seem to sell below market rates as their share prices are often underpriced, meaning that their value at the close of day one trading is higher than the initial price of the stock (Ritter, 1991). During the high IPO activity period that ended in year 2000 the initial returns were on average high. For example, in Finland the biggest initial profit was generated by F-Secure whose stock rose on its first trading day on November 5, 1999 from the initial offering price of 7.70 euros to 27.45 euros.

The initial underpricing of IPOs fits poorly to the long-term return on IPO shares. Ritter (1991) shows that IPO firms on average give poorer three-year returns than other listed firms in comparable sizes and industries. He explains this weak return on IPO shares with timing. Firms time their IPOs to the periods when the market overprices the firm, its industry and IPOs

in general. The weak share performance after the IPO can also be explained with earnings management. If the firm before the IPO artificially boosts its value through managing earnings, the market will sooner or later find out the true performance of the company and devalue its shares.

Healy and Wahlen (1999) define earnings management as an activity where managers use judgment to alter financial reports either to mislead stakeholders or to influence contractual outcomes. Compared to bad accounting or simple randomness, the distinguishing feature of earnings management is the presence of intent. Studies identifying earnings management usually make the assumption that intent is present in the circumstances where the tests are made. In research testing for earnings management in IPO firms it is assumed that it is capital market motivations that drive the firms to earnings management. The aim is to maximize the company's equity value and through this increase the owners wealth and reduce the company's financing costs.

The most commonly used method to test for earnings management is the examination of accruals because they are easier to manipulate than cash flows. Abnormal accruals[1] are considered as a sign of earnings management. The major problem in earnings management studies is how to determine if accruals are abnormally high or low. Most models used to estimate the normal level of accruals base their estimations on the firms' past accruals or a comparable firms' accruals. In the literature the normal and abnormal accruals are usually called nondiscretionary and discretionary accruals.

In particular, the research based on U.S. data provides strong evidence of discretionary accruals in IPO firms.[2] Additionally, Teoh, Welch and Wong (1998) show that discretionary accruals can be linked to companies' long term stock market performance and thus challenge the efficient market hypothesis, as the market fails to account for the manipulation. When they grouped firms by the magnitude of discretionary accruals before the IPO, they found that firms in the quartile with the lowest discretionary accruals (negative) outperformed the market by about 4% over three years, whereas firms in the quartile with the highest discretionary accruals underperformed the market by about 25%.

To date there have been at least two studies on earnings management in Finnish IPOs.[3] In addition to showing that earnings management has been present in Finnish IPOs, Ora (2000) investigates if there is any difference in earnings management behavior between 1980s and 1990s IPOs. Her results indicate that earnings management seems to have vanished in the

1 Abnormal accruals = total accruals – normal accruals.
2 For example, Aharony, Lin and Loeb (1993), Friedlan (1994) and Teoh, Welch and Wong (1998).
3 Both are masters theses with the grade excellent.

later period. Applying a total accruals measure[4] Ora's tests are affected by the substantial changes in discretionary reserves that Finnish companies could use for managing earnings. These visible forms of earnings management vanished gradually in the 1990s due to the accounting legislation reform.

Eriksson (2001) tests for earnings management on a similar sample to this study and uses a financial ratios model called the Beneish M-score. The higher the M-score the higher is the likelihood that earnings management has occurred. Eriksson's M-score averages of the sample indicates that no earnings management were present in the financial year closest to the IPO.

Hypothesis development

Many previous papers document evidence of opportunistic financial reporting in situations where it has a direct effect on managerial wealth. Healy (1985), Holthausen, Larcker and Sloan (1995) and Guidry, Leone and Rock (1999) find various degrees of earnings management to be connected to managers' bonus plans. Aboody and Kasznik (2000) show that managers delay the release of positive information and accelerate the release of bad news prior to stock-option award periods, thus trying to increase their stock-based compensation. Also in theoretical work the effect of earnings management on the managers' wealth and compensation is central in assessing when earnings management occurs (e.g. Dye, 1988 and Bebchuk and Bar-Gill, 2002).

The price at which the shares in an IPO are sold to investors has a significant effect on the wealth of the owners of the IPO firm. Entrepreneurs are generally both large owners of, and actively manage, the firm at the time it goes public. The combination of high incentive and opportunity makes entrepreneur owned IPOs more likely earnings managers compared to other IPOs. Furthermore, this incentive can be assumed to be related to the benefit the entrepreneurs' receive from a higher offering price. Entrepreneurs who reduce their ownership substantially have a stronger interest in a high offering price compared to entrepreneurs who reduce their ownership only modestly in the IPO.

Managers without essential ownership of the firm lack the incentive to manage earnings in the IPO. Considering the evidence in Aboody and Kasznik (2000) the non-owner managers may be biasing earnings downwards before the IPO because this may positively affect stock-based compensation in the future. The institutional owners in turn have an interest to refrain from earnings management although this could increase their proceeds at the IPO, because a higher offering price achieved through earnings management comes at a cost. The overstated earnings before the IPO are likely to be followed by earnings disappointments after the IPO. These disappointments may have a reputation cost for those associated with the IPO. Among

4 Net income (after tax) – cash flow.

others, underwriters (Tinic, 1988), owners (Megginson and Weiss, 1991) and board members (Certo, Daily and Dalton, 2001) have reputation capital at stake at the IPO. The biggest institutional owners of the non-entrepreneur owned firms in this study are venture capitalists, the Finnish state, or public companies, and can all be assumed to be concerned about their reputation capital.

The above arguments transforms to the following testable hypotheses:

H1: Earnings management is present in entrepreneur but not in institutional owned IPO firms.

H2: The earnings management magnitude in the entrepreneur IPO firm is positively related to the decrease (SALE) of the entrepreneurs' holdings in the firm.

The entrepreneurs' decrease in ownership is greater the larger the offering is and the bigger the part of the offered shares that are offered directly by the entrepreneur. In this paper the sizes of the share issue and the share selling are measured by the owners' decrease (SALE) in ownership and is calculated as follows:

$$(1) \quad \text{SALE} = \frac{(\text{Ownership before IPO (\%)} - \text{Ownership after IPO (\%)})}{\text{Ownership before IPO (\%)}}$$

In the following empirical analysis of the hypotheses, only the shareholdings of the biggest three shareholders at the time of the offering are examined.[5] There are three reasons for including only the biggest owners. First, both the incentives and possibilities to engage in earnings management are higher for big shareholders than for small ones. Second, the data sources put some limitations on how small shareholders could be included. Third, observing the biggest three shareholders gives a good picture of the development in the companies' ownership because the ownership before the IPO is generally concentrated. Before the IPO, the biggest three shareholders' mean and median holdings of the sample firms were 82.2% and 90.9 %.[6]

5 If it was apparent from the prospectus that one interest group had registered its ownership into smaller parts then the combined ownership of such a group was treated as one owner. Examples of these situations were when the company founder had allocated shares to his relatives or when an investment company had stakes in many names, such as Finnventure Fund I Ky, Finnventure Fund II Ky and Finnventure Fund III Ky, which are all Capman funds.

6 There are five companies in which the stake of the three biggest shareholders before the IPO were less than 50%. These were Liinos (49.4%), KCI (41.7%), Raute (35.7%), Tieto-X (30.5%) and Done (26.8 %).

3. SAMPLE AND METHOD

Sample

The sample consists of IPOs conducted on The Helsinki Stock Exchange (HEX) from the beginning of 1994 to the end of 2000. In all, 67 companies were listed during this period. From these companies, Santasalo-Jot was excluded because it was listed before on the OTC-list and the financial sector companies Eesti Uhispank and EQ Online were excluded because their accruals could not be compared to the other firms' accruals. Metsämarkka and Exel were excluded because their prospectuses did not contain all information required for the analyses. Biotie Therapies was excluded because it had practically no sales which would have resulted in extreme values in the calculations. Additionally, five companies were excluded because they did not offer their shares to the public.[7] The final sample consists of 56 IPO firms which are specified in Appendix 1.

Most of the financial data used in this study comes from the Voitto database.[8] Financial statements that could not be found in Voitto were manually retrieved from the prospectuses, the firms' home pages or by mail directly from the firms.[9] Shareholdings before, and the change in them due to the offering, were collected from the IPO prospectuses. Eighteen of the sample firms had only physical persons among the three biggest owners.[10] In four firms, the physical persons included in the three biggest owners owned the majority of the firms' shares and these firms were also considered entrepreneur owned.[11] In this manner the total sample of 56 firms was divided into 22 entrepreneur and 34 institutional firms. Table 1 gives the descriptive statistics of the sample.

Summarizing the data in Table 1, institutional firms were larger than the entrepreneur firms in terms of sales, assets and net income whereas entrepreneur firms had higher accruals (of total assets). The two firm groups showed the same level of profitability. Among both groups, the three biggest owners tended to jointly have a majority stake in the company both before

7 These were: Hämeen Sähkö, Lounais-Suomen Sähkö, Keskisuomalainen, Keski-Suomen Puhelin and Helsingin Puhelin.

8 The Voitto database is the most complete source of Finnish financial statement data that is delivered on a CD. It is provided by Suomen Asiakastieto Oy which is the leading business and credit information company in Finland.

9 The analysis builds mainly on the audited financial statements. For some firms, pro forma financial statements had to be used before the IPO because they did not include detailed audited financial statements for all needed years in the prospectus and these could not be found from other sources.

10 Firms where the majority owner was another firm that was owned by a person who could be considered an entrepreneur were treated as entrepreneur owned IPO firms. IPO firms like this were Marimekko that was controlled by Kirsti Paakkanen through Workidea Oy and SSH that was controlled by Tatu Ylönen through Applied Computing Research Oy.

11 These companies are TJ-Group, Eimo, Biohit and PMJ Automec.

TABLE 1. Sample firms' descriptive statistics for the financial year of the IPO.

	In the financial year of the IPO				
	E-Firms (N=22)	I-Firms (N=34)	Difference		All Firms (N=56)
Sales	43,268	711,621	668,353	**(0.048)**	449,054
	21,901	*65,955*	*44,054*	**(0.000)**	*47,811*
Net income	2,651	26,753	24,102	**(0.021)**	17,285
	1,699	*5,698*	*3,998*	**(0.002)**	*3,626*
Total assets	41,633	786,160	744,526	**(0.051)**	493,667
	19,564	*90,607*	*71,042*	**(0.000)**	*40,899*
TA / total assets	0.041	–0.024	–0.065	**(0.002)**	0.002
	0.030	*–0.023*	*–0.053*	**(0.004)**	*–0.004*
ROA	0.085	0.083	–0.002	(0.963)	0.084
	0.082	*0.058*	*–0.024*	(0.480)	*0.067*
Ownership before IPO (%)	76.85	85.73	8.88	(0.134)	82.24
	80.10	*99.19*	*19.10*	**(0.047)**	*90.90*
Ownership after IPO (%)	54.11	55.42	1.31	(0.789)	54.91
	57.51	*59.50*	*1.99*	(0.639)	*58.16*

Sales, net income and total assets are in thousands euros. Means (above) and *medians* (below) are given separately for institutional (I-Firms) and entrepreneur (E-Firms) as well as all firms in the sample. TA is total accruals as defined in equation (2). ROA is net income through ending assets. Ownership is for the three biggest owners (as before the IPO). The p-values (two-tailed) of the t-tests of the differences in mean and the Wilcoxon rank-sum tests of the differences in medians are reported in parentheses. P-values indicating statistical significance on the 10% level or better are in bold text.

and after the offering. The ownership of the institutional firms were more concentrated than entrepreneur firms before the IPO, but reached similar levels post-IPO as institutional owners reduced their ownership more than the entrepreneurs in the IPO.[12]

Method

Upward earnings management usually means borrowing from future earnings and should therefore lead to declining profitability in the periods following the period with managed earnings.[13] Therefore the analysis in the next section starts by observing time-series profiles of return on sales. Return on sales is defined as operating income divided by sales. Operating income is applied instead of net income because the aim of the paper is to examine the less visible forms of earnings management and to reduce the effect the IPO has on profitability by neglecting the financial items.

12 The median ownership drops below 50% of the shares in the second financial statement after the IPO.

In this paper the evidence of earnings management is sought from total and current accruals. Total accruals are here defined as the change in non cash working capital less total depreciation (as in e.g. Jones, 1991). More exactly, total accruals (TA) in period t are defined as follows:

$$(2) \quad TA = (INV_t - INV_{t-1}) + (REC_t - REC_{t-1}) + (PREEXP_t - PREEXP_{t-1}) - (TRADE_t - TRADE_{t-1}) - (ACCEXP_t - ACCEXP_{t-1}) - (ADVREC_t - ADVREC_{t-1}) - DEP_t$$

where, INV is inventories; REC is receivables; PREEXP is prepaid expenses and accrued income; TRADE is trade accounts payable; ACCEXP is accrued expenses and prepaid income; ADVREC is advances received; DEP is depreciation expense. Previous studies imply that earnings management via the depreciation accrual only has limited potential due to its visibility and predictability (e.g. Young, 1999 and Peasnell, Pope and Young, 2000). The main evidence of earnings management is based on current accruals which are obtained when depreciation is left out from equation (2).

In the literature, several variables have been used to estimate nondiscretionary accruals. Previously, nondiscretionary total accruals have been explained by assets (DeAngelo, 1986), sales (Friedlan, 1994 and Aharony, Lee and Wong, 2000) the change in sales and the level of property, plant and equipment (Jones, 1991). Nondiscretionary current accruals have been estimated through change in sales (Teoh, Welch and Wong, 1998).

The most popular method to estimate nondiscretionary accruals is the regression approach first used by Jones (1991). In order to be able to get reliable coefficient estimates for the variables explaining the nondiscretionary accruals level, the regression requires more observations than are available in this study. Both Friedlan (1994) and Aharony, Lee and Wong (2000) have applied a modified version of the DeAngelo model on small IPO firm samples.[14] The modification to the original DeAngelo model (DeAngelo, 1986) allows the nondiscretionary part of accruals to fluctuate between the test and benchmark periods due to changes in the firm's sales. This model is in this paper applied on current accruals as follows:

$$(3) \quad DA = \frac{CA_{testperiod}}{Sales_{testperiod}} - \frac{CA_{benchmarkperiod}}{Sales_{benchmarkperiod}}$$

13 The other possibility is that past earnings have been pushed forward to this period but this activity of delaying earnings is at least in IPO firms unlikely.
14 The samples of Friedlan (1994) and Aharony, Lee and Wong (2000) consisted of 155 and 83 IPOs respectively.

Discretionary accruals (DA) are the amount by which the test period current accruals (CA) to sales relation is greater (or less) than the CA to sales relation in the previous period.[15]

Prior research on earnings management in IPO firms is not consistent in the choice of the critical period in which earnings management is assumed. For example, Teoh, Welch and Wong (1998) and Aharony, Lee and Wong (2000) assume earnings management to be present in the year of the IPO whereas Aharony, Lin and Loeb (1993) and Neill, Pourciau and Schaefer (1995) use the closest year ending before the IPO year as their critical period. Friedlan (1994) is somewhere in between these two, finding earnings management in the interim financial statement if this is the most current in the prospectus or in the financial statements the year before the IPO if no interim report exist. Going through the results in the above mentioned studies, evidence of earnings management appears to be stronger in studies using the IPO year as the critical period. This may be the result of two things. First, earnings tend to be managed in the most recent financial report that is included in the prospectus, and if this is an interim report then earnings management still shows in the first financial statements after the IPO. Second, more often than not, the most recent financial statements in the prospectuses are interim reports.[16]

Consequently, in this study the critical period is the financial year ending prior to the IPO year if no interim report is included, or the financial year of the IPO if an interim report is included in the prospectus. The critical period is hereafter called period 0. The alternative would have been to use the interim reports themselves instead of the yearly financial statements. The problem of using interim reports however, is that they lack specified data to calculate accruals, and their varied time periods make analysis more difficult than if yearly financial statements are used.

4. EMPIRICAL ANALYSIS

The empirical analysis starts by observing the sample firms' profitability surrounding their IPOs. One problem in analyzing return on sales is that the IPO itself may affect profitability.[17] Figure 1 shows that overall the median return on sales seems to peek before the IPO and decline afterwards. Increasing earnings before the IPO can be explained both by timing and earnings

15 One problem here is that the sales figure itself can be biased upwards through too early recognition of sales, which can be corrected by adjusting sales by the change in accounts receivables as proposed by Dechow, Sloan and Sweeney (1995). This adjustment is not made here because of data limitations and because the adjustment assumes that all changes in receivables are due to earnings management and this is apparently not the case.

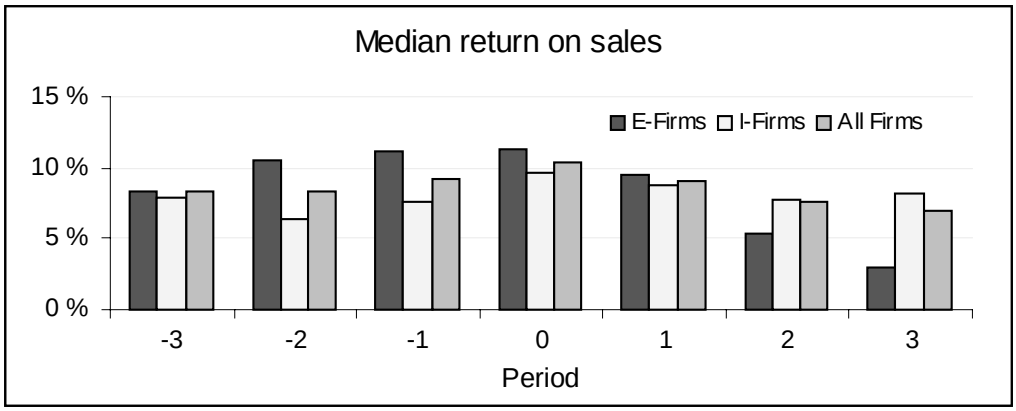
16 An interim report is the most recent financial statement in 31 of the 56 firms in this study and the comparable figures in Friedlan (1994) are 107 and 155.

17 46 of the 56 IPO firms got all or some of the offering proceeds. If the return on investment is declining then the higher assets may affect also the operating margin negatively because it includes depreciation.

management. Due to the time it takes to prepare the IPO the owners generally must decide to do the IPO before they know about the extraordinary good earnings that can be reported in the prospectus. Therefore, an earnings peek before IPO likely does not result only from successful timing.

As shown in Figure 1 the highest median return on sales (10.3%) for the total sample occurs during the critical period and with exception of period –1 it differs statistically from the profitability in the other periods. When comparing the profitability of the critical period to the periods before it, the entrepreneur firms do not show any statistically significant difference but the institutional firms do ($p < 0.10$).[18] This is in contrast to the profitability pattern after the critical period when the entrepreneur firms show a high decrease in profitability that is very significant both economically and statistically ($p < 0.01$) but the institutional firms do not.

FIGURE 1. The development of the IPO firms' median return on sales.



Return on sales is operating income/sales. The critical financial statement is for time period 0. For firms with an interim report as the most current financial report before the IPO, the IPO year is the critical period otherwise it is the financial year ending before the IPO year.

Because the analysis of profitability does not give any direct evidence on earnings management, attention is turned to accruals. To answer the question if firms' good earnings in period 0 are at least partly due to earnings management, both current and total accruals as well as discretionary accruals from equation (3) are analyzed. The development of these variables are shown in Table 2. Due to the fact that two years are needed to calculate accruals and

18 Two-tailed Wilcoxon signed-rank tests.

three years to estimate discretionary accruals, period –2 discretionary accruals can only be calculated for 25 of the 56 sample firms. The most interesting column in Table 2 is for period 0, i.e. the critical period for which earnings management is tested. In the statistical tests, period 0 is assumed to be the benchmark against which the other observations are tested. The statistical significance of the difference in means and medians are tested with two-tailed t-tests and Wilcoxon signed-rank tests.

Examining the development in the entrepreneur firms, both accruals measures are significantly higher in period 0 compared to period –1. After the critical period the mean and median accruals decrease but this decrease is not statistically significant at conventional levels. The significant increase in accruals in the critical period transforms also to high discretionary accruals, with mean and median values of 0.055 and 0.032, in this period. For entrepreneur firms, the discretionary accruals in the critical period are significantly higher both compared to period –1 and to periods 2 and 3.

The accruals in the institutional firms or the total sample do not provide the same evidence of earnings management as noticed in the entrepreneur firms. The accruals of the institutional firms increase in the period after the IPO. This can be a sign that the institutional owners and investment banks[19] are aware of their reputation capital an thus bias accruals downwards at the IPO. Another explanation for the institutional firms' high accruals after the IPO is that the managers of these firms want to impress, or at least avoid disappointing, the market in their first period of public following. The evidence of any earnings enhancement in the institutional firms is however weak as the discretionary accruals do not show any significant growth. Summarizing, the evidence points towards the acceptance of H1, before the IPO earnings are managed in the entrepreneur firms but not in the institutional ones.

Hypothesis 2, that the more the entrepreneurs give up their ownership in the IPO as measured by SALE from equation (1) the higher the evidence of earnings management, was tested by measuring the correlation between SALE and discretionary accruals in the critical period. The obtained Pearson and the Spearman correlation coefficients (–0.087 and 0.063) were close to zero, had different signs and were highly insignificant (two-tailed p-values of 0.699 and 0.782). The correlations between SALE and discretionary accruals were also obtained for the institutional firms and the total sample and no connection between the variables could be found here either. Consequently, the findings do not support H2 because the amount the old owners give up their ownership in the IPO seems not to be connected to earnings management.

19 The investment banks in the institutional IPOs tended to be larger.

TABLE 2. The development in accruals and discretionary accruals surrounding the IPO.

		Period									
		–2		–1		0	1		2		3	
Entrepreneur firms												CA / sales
Mean		0.054	(0.941)	0.003	**(0.017)**	0.057	0.052	(0.855)	0.056	(0.947)	0.006	(0.187)
	Median	0.041	(0.657)	0.013	**(0.026)**	0.066	0.038	(0.808)	0.039	(0.961)	0.037	(0.243)
TA / assets	Mean	0.029	(0.877)	–0.048	**(0.006)**	0.039	0.011	(0.421)	–0.013	(0.121)	–0.030	(0.158)
	Median	0.021	(0.790)	–0.023	**(0.010)**	0.037	–0.002	(0.808)	0.008	(0.123)	–0.027	(0.171)
	N	11		22		22	22		22		19	
DA	Mean			–0.087	**(0.025)**	0.055	–0.005	(0.218)	0.004	**(0.050)**	–0.040	**(0.051)**
	Median			–0.067	**(0.033)**	0.032	–0.001	(0.306)	–0.012	**(0.082)**	–0.032	**(0.049)**
	N			11		22	22		22		19	
Institutional firms												
CA / sales	Mean	0.006	(0.988)	0.007	(0.576)	–0.046	0.030	**(0.073)**	0.013	(0.158)	0.018	**(0.068)**
	Median	0.010	(0.778)	0.008	(0.923)	–0.005	0.025	**(0.010)**	0.019	(0.161)	0.015	**(0.025)**
TA / assets	Mean	–0.062	(0.584)	–0.063	(0.651)	–0.143	–0.025	(0.103)	–0.055	(0.217)	–0.041	(0.102)
	Median	–0.058	(0.221)	–0.071	(0.620)	–0.063	–0.031	**(0.019)**	–0.026	**(0.098)**	–0.045	**(0.024)**
	N	14		27		34	34		33		27	
DA	Mean			–0.019	(0.593)	–0.016	0.075	(0.355)	–0.019	(0.570)	0.002	(0.772)
	Median			–0.013	(0.397)	–0.003	0.037	(0.203)	–0.024	(0.603)	–0.011	(0.970)
	N			14		27	34		33		27	
All firms												
CA / sales	Mean	0.027	(0.934)	0.005	(0.343)	–0.004	0.037	(0.142)	0.030	(0.213)	0.013	(0.280)
	Median	0.019	(0.545)	0.009	(0.121)	0.020	0.032	**(0.089)**	0.025	(0.355)	0.018	(0.413)
TA / assets	Mean	–0.022	(0.635)	–0.056	(0.257)	–0.071	–0.011	(0.197)	–0.038	(0.463)	–0.037	(0.269)
	Median	–0.047	(0.614)	–0.053	**(0.021)**	–0.022	–0.018	(0.242)	–0.025	(0.907)	–0.041	(0.552)
	N	25		49		56	56		55		46	
DA	Mean			–0.049	**(0.045)**	0.017	0.041	(0.853)	–0.009	(0.665)	–0.015	(0.167)
	Median			–0.020	**(0.035)**	0.007	0.027	(0.996)	–0.023	(0.340)	–0.013	(0.135)
	N			25		49	56		55		46	

In the table current accruals (CA) to sales and total accruals (TA) to assets are shown two periods before and three period after period 0 whereas discretionary accruals (DA) are reported one period before and three periods after period 0. For each period, the discretionary accruals are estimated with the modified DeAngelo model from equation (3), the benchmark period being the previous period. Period 0 is the critical period for which earnings management is tested. The p-values reported in the parentheses indicate the statistical significance (two-tailed) between any given period and the critical period and are calculated with a t-test for the means and the Wilcoxon signed-rank test for the medians. P-values in bold print indicate significance at the 10% level or better.

5. CONCLUSION

This study examined the presence of earnings management in IPO firms. The firms' ownership structure and the pre-IPO owners share of ownership decrease in the IPO were used to form expectations about the likelihood of finding earnings management before the IPO. Earnings management was hypothesized to be present in the entrepreneur owned but not in the institutionally held firms. Furthermore, the probability of earnings management was assumed to be related to how much the entrepreneurs' ownership decreased in the IPO.

The profitability of the total sample of 56 Finnish IPO firms showed a relatively high level of profitability in the critical period for which earnings management was tested when compared to three periods before and after the critical period. The most significant change in profitability occurred in the entrepreneur firms after the IPO. To answer the question of whether high profitability was only a result of successful timing, earnings management tests were conducted on accruals. The results support the hypothesis that entrepreneurs' manage earnings before the IPO. In contrast to expectations, earnings management behavior seemed not be affected by how much of their ownership entrepreneurs gave up in the IPO. In the institutional owned IPO firms, no evidence of upward earnings management before the IPO was found.

Among this study's limitations, the most significant is the small sample size. Another significant limitation is the common characteristics of the entrepreneur owned firms that may have influenced the results. These limitations notwithstanding, this study observed a systematic pattern of earnings management in entrepreneur owned IPO firms. ■

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APPENDIX 1. The sample

IPO Year	Company	Owner type	Sector (list if not main)
1994	Espoon Sähkö	Institution	Energy
(3)	Kemira	Institution	Chemicals
	Raute	Institution	Metal & Engineering
1995	Neste	Institution	Energy
(5)	Nokian Renkaat	Institution	Other Industries
	Ponsse	Entrepreneur	OTC-list
	Rauma	Institution	Metal & Engineering
	Suunto	Institution	Other Industries
1996	Kauppakaari	Institution	OTC-list
(2)	KCI Konecranes International	Institution	Metal & Engineering
1997	Elcoteq Network	Entrepreneur	Telecomm. & Electronics
(8)	Incap	Institution	OTC-list
	Jaakko Pöyry Group	Institution	Other services
	Kyro	Entrepreneur	Other Industries
	Metsä Tissue	Institution	Other Industries
	Nordic Aluminium	Institution	Metal & Engineering
	PK Cables	Institution	Telecomm. & Electronics
	Rocla	Institution	Metal & Engineering
1998	A-Rakennusmies	Institution	Other services
(7)	Fortum	Institution	Energy
	JOT Automation Group	Entrepreneur	Telecomm. & Electronics
	PMJ Automec	Entrepreneur	Telecomm. & Electronics
	Rapala Normark	Institution	Other Industries
	Sonera	Institution	Telecomm. & Electronics
	Sponda	Institution	Investment
1999	Aldata Solution	Institution	Other services
(19)	Biohit	Entrepreneur	NM-list
	Comptel	Institution	Telecomm. & Electronics
	Eimo	Entrepreneur	Telecomm. & Electronics
	F-Secure	Entrepreneur	Telecomm. & Electronics
	Janton	Institution	Media & Publishing
	Liinos	Entrepreneur	NM-list
	Marimekko	Entrepreneur	I-list
	Nedecon	Entrepreneur	NM-list
	Perlos	Institution	Telecomm. & Electronics
	Proha	Entrepreneur	NM-list
	Sanitec	Institution	I-list
	Stonesoft	Entrepreneur	I-list
	Sysopen	Entrepreneur	Telecomm. & Electronics
	Technopolis	Institution	Investment
	Teleste	Institution	Telecomm. & Electronics
	TH Tiedonhallinta	Entrepreneur	NM-list
	Tieto-X	Entrepreneur	NM-list
	TJ Group	Entrepreneur	NM-list
2000	Basware	Entrepreneur	NM-list
(12)	Satama Interactive	Institution	NM-list
	Saunalahti	Institution	NM-list
	Etteplan	Entrepreneur	NM-list
	Tekla	Institution	Telecomm. & Electronics
	Wecan Electronics	Entrepreneur	Telecomm. & Electronics
	Iocore	Institution	NM-list
	Done	Institution	NM-list
	Tecnomen	Institution	Telecomm. & Electronics
	Okmetic	Institution	Telecomm. & Electronics
	Beltton	Entrepreneur	NM-list
(56 in all)	SSH Communications Security	Entrepreneur	Telecomm. & Electronics