Cooking the books around initial public offerings

A study about the pervasiveness of earnings management and investor protection regulations

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Executive summary
Most prior studies suggest that firms opportunistically increase their earnings around an initial public offering (IPO). With a sample of 512 IPOs in 24 countries worldwide I find that IPO firms that are under suspicion of such behaviour, represent only a small proportion (+/-10%) of the total sample. My findings challenge the opportunistic perspective on earnings management and suggest that the information perspective is more pronounced. Furthermore, I find no evidence for a positive relationship between low investor protection regulations and opportunistic earnings management. It seems that stronger enforcement of investor protection laws do not counter self-interested behaviour.

1. Introduction

Earnings management received more and more attention in the accounting literature. In the context of initial public offerings (IPOs) most researchers found pervasive evidence for earnings management (Friedlan 1994; Teoh et al. 1998, 1998a; Roosenboom et al. 2003; Pastor and Poveda 2006). They explain that IPO firms (also shortened as IPOs) use their managerial discretion to increase earnings. Researchers interpreted the evidence by suggesting that these income increasing activities are driven by opportunistic behaviour. IPOs are particularly liable to such behaviour because both incentives and possibilities are offered around the IPO process. An important incentive for IPOs is to achieve high offer prices when offering their shares to the public. Possibilities for opportunistic earnings management exist, because there is an unusually high level of information asymmetry around that time. Managers have the possibility to choose accounting methods that benefit their own interest. For investors it is difficult to access if those accounting methods reflect the true economic performance. (Ahmad-Zaluki et al. 2007, 1)

Recently Ball and Shivakumar (2006, 30-32) doubted the evidence in IPO earnings management research. First, they did not found pervasive evidence of earnings

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management in their study on the U.K. market. Ahmad-Zaluki et al. (2007, 31) stated that differences in pervasive earnings management evidence, can be the result of different environmental and company specific factors. For example, they found that earnings management is only pervasive in a period of an economic stress (East Asia crisis of 1997 and 1998). Ball and Shivakumar (2006, 32) secondly stipulated that the appearance of discretionary accruals (which are frequently used as indicators of earnings management) is not caused by managerial self-interest, but by working capital changes that are endogenous to IPOs. Therefore they supported the "information perspective" on earnings. This perspective explains that managers have the opportunity to use their discretion (judgements and estimates), to manage earnings to a level that reflect the firms' true economic performance[4]. In this scenario investors face fewer costs, because they do not have to search for additional information from other sources.

Based on a sample of 512 companies that went public from 2001 to 2004 on worldwide stock markets, this positive accounting research presents new evidence regarding these debates. This paper first re-examines the extent of IPOs that engage in income increasing earnings management[5]. This paper re-examines the subjects with a more recent sample and with better accrual estimating models, compared with most prior research. Second, with reference to Ball and Shivakumar (2006), this paper re-examines on the basis of three conditions the extent of IPOs that are under suspicion of opportunistic earnings management. The three conditions are:

1) Significantly positive discretionary accruals and exceptionally high earnings in excess of operating cash flow, in the year that earnings management is applied.
2) Negative discretionary accruals and exceptionally low earnings in post-earnings management periods.
3) Exceptionally inferior operating performance in post-earnings management periods.

Re-examining both these subjects is necessary, because criticism like Ball and Shivakumar (2006) showed that present evidence is far from unequivocal. New evidence will shed more light on the pervasiveness of earnings management in general and of opportunistic behaviour specifically.

Third, in continuation of Ahmad-Zaluki et al. (2007, 31) who advised for further investigations about environmental and company factors, this paper examines the relationship between investor protection regulations and earnings management. This paper also examines if these regulations constrain opportunistic behaviour. To the author's best knowledge, are these investigations unique in the IPO context.

[4] See Deegan (2000) and Beneish (2001) for more information about the opportunistic and information perspectives.

[5] This paper does not examine other forms of earnings management, for example conservative accounting. This paper uses for the sake of simplicity the term "earnings management" as a synonym for the term "income increasing earnings management".

Insight in the above mentioned subjects accesses in which extent earnings management may be detrimental to investors and other stakeholders, and in which extent investor protection regulations constrain managerial self-interested behaviour. Information about these subjects helps standards to determine how much discretion should be given to managers and whether new disclosures or standards are required, or whether existing standards can be maintained. It helps issuing firms about how discretionary accruals affect the post-issue performance, and might affect the cost of equity. And it helps investors and other stakeholders to distinguish IPOs that engage in earnings management, by analysing their accruals and financial position. (Teoh et al. 1998, 202-203; Healy and Wahlen 1999, 3)

The above mentioned research subjects lead to the following research question:

"Do firms engage in income increasing earnings management based on accruals around IPOs? If yes, what is the extent of firms that are under suspicion of opportunistic behaviour? What is the relationship between investor protection regulations and earnings management around IPOs? And are there indications that these regulations constrain opportunistic behaviour?"

To answer the research question this paper first describes in section 2, how earnings management is defined and what accruals are. It then describes which motivations IPOs may have to engage in earnings management. Section 2 provides also a briefly literature study and shows how this paper contributes to prior literature. The section ends with explaining the relation between earnings management and investor protection regulations. Section 3 describes the hypothesises that are formed and the sample selection and data. It also describes how earnings management is measured in this paper. The results and analyses of the empirical research are provided in section 4. This section explains these results with expectations, and with conclusions from prior research. It also gives suggestions for further research. Section 5 stipulates the conclusions of this paper.

2. Prior literature

2.1 Earnings management around IPOs

Schipper (1989, 92) defined earnings management as *"A purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain"*. Accrual accounting is one of the methods that managers have to engage in earnings management[6]. This paper focuses on this method. Accruals are the differences between a periods' earnings and cash flows. Accruals can be split up into non-discretionary accruals and discretionary accruals. Discretionary accruals are determined by managers. Non-discretionary accruals are imposed by the situation and the sector in which a firm is acting, by the scale of the firm, by the total net revenue and by the value of the assets. Most

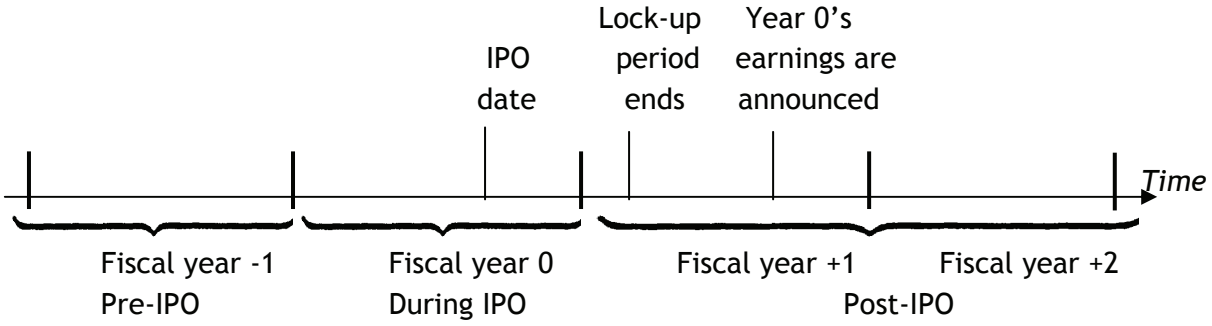
[6] See Stolowy and Breton (2000) and Mohanram (2003) for an overview of earnings management methods.

researchers use significantly positive discretionary accruals as an indicator for earnings management. (Teoh et al. 1998, 203; Mohanram 2003, 5)

Ritter (1998, 5) defined an IPO as: *"An IPO occurs when a security is sold to the general public for the first time, with the expectation that a liquid market will develop"*. There are some explanations why IPOs engage in earnings management. Most of the following explanations are related with opportunistic earnings management, not with informative. Firstly, there is pressure from key players in the IPO process to report favorable earnings, for example from the underwriter and underwriting investment bankers. Secondly, the 'lock-up' period offers an incentive. When managers want to sell their shares with a maximum profit after the lock-up period, they have the incentive to maintain high earnings after the issuing. Thirdly, the reliability of the investors offers an incentive. Investment bankers make predictions for the future. The firm wants to obtain these predictions to avoid a decline in the confidentiality of the investors. Investment bankers also desire that shares are fully subscribed and that the price has a sufficient level. These aspects are important when firms want to do a secondary equity offering. Finally, when earnings decline rapidly immediately after the firm goes public, this usually leads to a rapid decline in share prices. This decline may result in lawsuits between the firm and discontented shareholders. An explicit incentive for informative earnings management is to provide high financial reporting quality. The role of external financial reporting is to *"portray differences in firms' economic positions and performance in a timely and credible manner"* (Healy and Wahlen 1999, 1). Informative earnings management may therefore be sufficient for parties that use financial reporting for contracting purposes and for investment decision making. (Teoh et al. 1998, 179; Roosenboom et al. 2003, 3; Li et al. 2006, 4)

When firms want to influence the firms' earnings they have three timing possibilities. Figure 1 shows these timing possibilities: the pre-IPO period (years -1, -2, etc), the IPO year (year 0) and the subsequent years (year 1, 2, etc).

Figure 1 - The timeline of IPOs



Friedlan (1994) and Neill et al. (1995) found evidence for earnings management in the pre-IPO period. On the other hand, Aharony et al. (1993), Roosenboom et al. (2003, 21) and Ball and Shivakumar (2006, 30) also examined the years before the IPO but found no evidence. Teoh et al. (1998, 203) examined if IPOs use accruals to increase earnings during

the IPO year. They investigated a sample of 1,649 U.S. IPOs and found that the median net income of the most aggressive quintile (highest discretionary accruals) are positive in the year of the IPO and decreases, to become zero in the fourth year after IPO. The operating cash flow is negative in the year of the IPO and increases in the subsequent periods. The net income of the more conservative quintiles decreases, but stabilise more and move upwardly. Teoh et al. (1998, 203) interpreted these patterns that managers use discretionary accruals driven by self-interest behaviour, to increase reported earnings in the period during the IPO. Other researchers strengthened this conclusion (Roosenboom et al. 2003, 23; Pastor and Poveda 2006, 25). Bajor (2002) focussed on the post-IPO period. He selected 190 U.S. firms that issued an IPO in 1995 and found significantly positive discretionary accruals in year +1. He stated that managers increase income driven by self-interest. Similar results were found by Teoh et al. (1998, 1998a).

To summarise, most researchers found evidence for pervasive earnings management during and after the IPO. However, recently Ball and Shivakumar (2006, 30-32) had several concerns about these studies, especially about the Teoh et al. (1998, 1998a) studies (Ahmad-Zaluki 2007, 7). Firstly, they found bias in the study of Teoh et al. (1998a) and therefore concluded that parts of the evidence of the study of Teoh et al. (1998a) were unreliable. Secondly, Ball and Shivakumar (2006, 30) did not found evidence for income increasing earnings management. They only found conservative figures[7]. Ball and Shivakumar (2006, 32) also argued that in cases that discretionary accruals appear, this is not the result of earnings management but a result of working capital changes, which is endogenous to an IPO. They stipulated that in events like IPOs, firms usually adjust their working capital automatically. One reason that firms are going public is to unburden a resources constrain. This means that IPOs seems to have under-invest in inventory and receivables in pre-IPO periods, and use the IPO to relieve these constrains. In addition, IPOs seems to have over-use trade credit and other operating liabilities. Both those assets and liabilities are identified as “income increasing discretionary accruals” by Teoh et al. (1998, 1998a), but Ball and Shivakumar (2006, 32) identified those assets and liabilities as working capital changes which are endogenous to IPO proceeds. Finally Ball and Shivakumar (2006, 32) stated that IPOs do not opportunistically manage their earnings but provide higher quality financial information, demanded by public investors (the information perspective). This conclusion was strengthened by Fan (2007, 1), who stressed that earnings management could result in considerable costs for IPOs. He stated that most IPO´s have no incentives to use earnings management once it exceeds the point of being informative. They would only manage earnings to a level that expresses the real future performance of the firm.

2.2 The contribution of this paper

Criticism of Ball and Shivakumar (2006) showed that evidence on the pervasiveness of earnings management, opportunistic behaviour specifically, is far from unequivocal. In order to shed more light on this issue, this paper will first re-examine the extent of IPOs

[7] Both conservative and aggressive accounting can be defined as earnings management. This paper mainly focuses on aggressive accounting, this means that earnings are managed upwards instead of downwards.

that engage in earnings management. It performs the investigations with a more recent sample (21st century) and with better accrual estimating models[8]. This paper uses significantly positive discretionary accruals as indicator for earnings management, which is consistent with prior research (Teoh et al. 1998, 203; Roosenboom et al. 2003). Secondly, based on three conditions, this paper re-examines the extent of IPOs that are under suspicion of opportunistic earnings management behaviour. These IPOs should meet all the following three conditions to be under suspicion:

1. Discretionary accruals in the year of earnings management are significantly positive and earnings are, compared with other IPOs, exceptionally highly in excess of operating cash flow.
This paper assumes that in these situations discretionary accruals are used to manage earnings by a considerable increment.
2. Discretionary accruals in post-earnings management periods are negative and earnings are, compared with other IPOs, exceptionally low.
This paper assumes that in these situations the decline in earnings is a result of accruals that undergo reversal. This paper assumes that earnings are exceptionally low because the IPOs were not aware of the level of equilibrium of earnings management costs and revenues.
3. Inferior return of sales (ROS) and return of assets (ROA) in post-earnings management periods.
This paper assumes that when earnings are managed to a level that exceeds the level of equilibrium of costs and revenues, the accruals that undergo reversal, affect operating performance (ROS and ROA) in the periods after earnings management was used. Using ROS is consistent with Teoh et al. (1998) and Ahmad-Zaluki et al. (2007). Using ROA is consistent with Teoh et al. (1998).

When earnings are highly in excess of operating cash flows (condition 1) this may indicate earnings management. However, to express a judgement about the *degree* of earnings management (e.g. strong, normal and weak income increasing), this paper uses the word "exceptionally". It assumes that when earnings are *exceptionally* high in excess of operating cash flows strong income increasing earnings management is applied. This paper assumes that this strong level of earnings management is only applied when a firm is driven by self-interest, because when operating cash flows are exceptionally lower than earnings this can lead to liquidity problems. Liquidity problems may lead to misallocated capital and loss of financial prosperity (Schipper and Vincent 2003). The chance that a firm wants to express the real economic performance of the firm by strong upwardly managed earnings is small.

Fan (2007) explained that IPOs only engage in earnings management when this expresses the real future performance of the firm. Because IPOs that meet condition 2 and 3 have inferior post-issue performance (measured by earnings in condition 2 and operational effectiveness ratios ROS and ROA in condition 3), earnings management did not reflect the

[8] Performance adjusted models are used in this paper. These models are not so much used in prior studies yet.

future performance. Hence, this paper assumes that these IPOs did not engage in earnings management to increase the informativeness of earnings.

The three conditions are selected because they are all associated with costs and risks for IPOs and expose IPOs to several problems. For example, inferior post-issue performance caused by earnings management is associated with involuntary de-listing risks (Li et al. 2006). To use these three conditions as proxies for opportunistic behaviour is consistent with some prior research, for example Teoh et al. (1998, 176) stated that: *"A finding that accruals are unusually high in the IPO year, that post-IPO earnings are low, and that high IPO-year accruals predict low subsequent earnings would be consistent with the hypothesis of opportunism"*.
Several studies (Teoh et al. 1998; Fan 2007) pointed out that IPOs suffer a decline in the operating performance in post-IPO periods. Researchers try to explain this decline by examining the relationship with discretionary accruals. They stipulate that inferior post-IPO operating performance occurs because discretionary accruals undergo reversal. Ahmad-Zaluki et al. (2007) weakened this statement with their study on the Malaysian market. They only found weak evidence that earnings management by IPOs is associated with lower post-issue operating performance. The results of this paper regarding condition 3 are, besides to examine opportunistic behaviour, also used to give more insight in this debate.

Ahmad-Zaluki et al. (2007, 30) found evidence that IPOs in Malaysia only engage in earnings management in times of economic stress (East Asia crisis). And Chen et al. (2005) found that firms with big four auditors engage less in earnings management compared to firms with non-big four auditors. Studies as these pointed out that the pervasiveness of earnings management depends on environmental and company-specific factors. A growing body of present papers strengthened this statement (Lewis 2007; Fan 2007). This paper will investigate if investor protection rules are a environmental factor that effect the extent of earnings management. And if the extent of opportunistic earnings management differ in countries with different investor protection regulations. To the authors best knowledge, are these investigations unique in the IPO context.

2.3 Earnings management and investor protection

Investor protection can be defined as *"the protection of outside investors by the enforcement of regulations and laws"*. (Shleifer and Wolfenzon 2002, stated in Boonlert-U-Thai 2004, 7). Insiders have incentives to conceal the true performance of the firm by managing earnings to retain private control benefits. A private control benefit is, for example, consumption of the firms' assets by other firms owned by managers. In general, the common aspect of private control benefits is that value is maintained by insiders and not shared with outside investors. Investors are protected by law and regulation to avoid this unfair distribution of value. They have opportunities to take disciplinary actions against the insiders, when they detect this unfair distribution. However, managers have the possibility to manage the degree and variability of earnings to mask the private control benefits. (Leuz et al. 2003, 2)

Leuz et al. (2003) investigated the level of earnings management in 31 countries in the world. They found that firms in countries with strong investor protection regulations engage in less earnings management, compared with firms in countries with weak investor protection regulations. Leuz et al. (2003, 21) stated that the reason for the lower level of earnings management is, that managers have less opportunities to retain private control benefits and therefore have fewer incentives to conceal the performance of the firm. This indicates that a strong level of protection limits insiders' ability to expropriate values of the firm. Leuz et al. (2003, 21) concluded that their evidence highlight an important relationship between the quality of earnings and investor protection. The findings of Leuz et al. (2003, 21) are strengthened by evidence of other papers, for example Boonlert-U-Tai (2004).

Firms can use their discretion to increase the informativeness of earnings. Leuz et al. (2003, 9) stipulated that this may be the result of effective investor protection regulations and therefore may not apply to firms in countries with weak investor protection regulations. They stated that firms in poor investor protection countries have more possibilities to manage earnings more aggressive, compared with strong investor protection countries. However, they have not examined this. This paper contributes to such further research and examines if there is a positive relationship between weak investor protection regulations and opportunistic behavior.

In the literature are several indexes for the level of investor protection regulations available. Leuz et al. (2003) used the index of La Porta et al. (1998), which is based on the rules in the nineties. Several researchers have criticised this index (Djankov et al. 2008) and this paper chooses therefore a new and more recent index: the investor protection index of Djankov et al. (2008). They presented an index that measures the extent in which shareholders are protected against expropriation by firms insiders. Their index is composed with the help of Lex Mundi law firms and is based on the rules prevailed in 2003.

3. Hypothesis development and research design

3.1 Hypothesis development

This paper first examines if significantly positive discretionary accruals are present in year -1, 0 or +1, and if they undergo reversal in year +2 and become negative. To examine the robustness of the results of the discretionary accruals, this paper performs a re-weighting procedure with outliers (e.g. if discretionary accruals are still present when outliers are eliminated), which is also used by Roosenboom et al. (2003, 20). And it uses a control group to compare discretionary accruals of this group with those of the sample group. This procedure is consistent with Bajor (2002, 41).

After these two robustness checks this paper examines the three conditions for opportunistic behaviour. First if there is a *positive* relationship between significantly positive discretionary accruals, and exceptionally high earnings in excess of operating cash flow in the same year. Second if there is a *positive* relationship between earnings of IPOs

with significantly positive discretionary accruals, and negative discretionary accruals and exceptionally low earnings in post-earnings management periods. And third if there is a *positive* relationship between significantly positive discretionary accruals that undergo reversal and become negative, and inferior operating performance in later periods. Finally, this paper examines if there is a *positive* relationship between earnings management, opportunistic behaviour specifically, and low investor protection regulations.

3.2 Sample selection and data

The original sample consists 4,563 IPO observations from 31 countries in the period 2001 till 2004 (4 years). The IPO observations are obtained from the Thomson One Banker database. The countries are selected for two reasons: 1) all countries have an sufficient number of IPOs in the selected period (more than 10) and 2) neither of these countries suffer hyperinflation in the sample period, which strongly affect earnings management measures (Leuz et al. 2003, 10). The sample period is chosen because: 1) it is not overlapping with prior research, 2) the investor protection index is based on the legal rules prevailing in the year 2003 and therefore usabe to the sample period, and 3) the sample period avoids the dot-com bubble (1995 till the spring of 2001). The following firms are excluded: 1,048 firms with no Sedol number available, 1,035 secondary equity offerings, 639 financial and insurance companies, 304 issuers of non-ordinary and non-common shares, 55 regulated utility firms, 2 privatization's of state-owned enterprises and 968 firms with incomplete financial data. To exclude these groups is consistent with prior IPO research (Teoh et al. 1998; Roosenboom et al. 2003), which makes comparisons with other papers' results more reliable, and the sample group reaches more homogeneity. The final sample consist 512 IPOs from 24 different countries[9], spread across all industries.

Accruals are measured through accrual estimating models. This paper uses two models which enhances the robustness of the results (Xiong 2006, 219). Different models are evaluated for this research and the performance adjusted models advised by Kothari et al. (2005, 195) are chosen[10]. Kothari et al. (2005, 195) found that the best measures of discretionary accruals (with the lowest type I and type II errors), can be achieved using the Jones (1991) model or the Modified Jones (1995) model adjusted for a performance adjusted firm's discretionary accrual. For the performance adjustment process this paper uses the sort of industry and the ROA, which is advised by Kothari (2005, 165). This paper uses the cross-sectional regression analysis and it includes a constant term in the functions of the models. There are in total 2,048 IPO year observations (512 IPOs times 4 years). The matching process to obtain control firms for the performance adjusted models starts, consistent with Kothari et al. (2005, 173), at the Two digit SIC code level. This means that

[9] The countries are Australia, Austria, Canada, Denmark, France, Germany, Greece, Hong Kong, India, Indonesia, Italy, Japan, Malaysia, Netherlands, Norway, Philippines, Singapore, South Korea, Sweden, Switzerland, Taiwan, Thailand, the United Kingdom and the United States.

[10] In this study the Modified Jones (1995) model with ROA as an additional regressor, is also selected and used to determine discretionary accruals. But there were striking results when comparing the models´ results with the other two models, and between the results of the sample and the control group of this model. This paper gives no outline of these results and interprets the results as an indication that the model is fairly ineffective.

each IPO year observation is matched with a control firm in the same country, with the same Two digit SIC code level and with the closest ROA in the same year. If the percentage difference of the ROA between the IPO and the control firm is more than 20%, the matching process is moved to the One digit SIC classification, which is consistent with Singer (2006, 12) and Fan (2007, 15). This matching procedure is able to obtain close matches for most of the IPO year observations: for 1,054 IPO year observations of the Performance adjusted Jones (1991) model discretionary accruals and for 1,055 of the Modified Jones (1995) version. The majority of the IPO year observations have a ROA of not more than 5% difference with the control firms in the same year.

3.3 Accrual estimating models

The estimating procedure for accruals is as follows. The first step is to measure total accruals using the Jones (1991) definition, which defines total accruals as the difference between earnings and operating cash flows. These are calculated by the following formula:

$TA_\tau = (NI_\tau - CFC_\tau) / A_{\tau-1}$ (equation 1)

Where:

TA	=	total accruals in year τ
NI_τ	=	net income in year τ
CFC_τ	=	cash flows from operations in year τ
$A_{\tau-1}$	=	total assets at τ-1

The second step is to measure non-discretionary accruals. The formula for the Performance adjusted Jones (1991) model is as follows:

$NDA_\tau = \alpha 0 + \alpha 1\ (1/A_{\tau-1}) + \alpha 2\ (\Delta REV_\tau) + \alpha 3\ (PPE_\tau)$ (2)

Where:

NDA_τ	=	non-discretionary accruals in year τ
ΔREV_τ	=	revenues in year τ less revenues in year τ-1 scaled by total assets at τ-1
PPE_τ	=	gross property plant and equipment in year τ scaled by total assets at τ-1
$\alpha 0, \alpha 1, \alpha 2, \alpha 3$	=	firm-specific parameters

The firm-specific parameters, $\alpha 0, \alpha 1, \alpha 2, \alpha 3$ are obtained from a linear cross-sectional regression of financial information from the control group. The model of this regression analyses is:

$TA_\tau = a0 + a1\ (1/A_{\tau-1}) + a2\ (\Delta REV_\tau) + a3\ (PPE_\tau)$ (3)

Were a0, a1, a2 and a3 are the ordinary least squares (OLS) of $\alpha 0, \alpha 1, \alpha 2$ and $\alpha 3$.

For the Performance adjusted Modified Jones (1995) model the formula for non-discretionary accruals accruals is:

$NDA_\tau = \alpha 0 + \alpha 1\ (1/A_{\tau-1}) + \alpha 2\ (\Delta REV_\tau - \Delta REC_\tau) + \alpha 3\ (PPE_\tau)$ (4)

$\Delta REC\tau$ stands for the net receivables in year τ minus the net receivables in year τ-1 scaled by total assets at τ-1. The other variables represent the same variables as in the Performance adjusted Jones (1991) model.

The next step is to determine discretionary accruals (DA) by the following formula:

$$DA\tau = TA\tau - NDA\tau \quad (5)$$

Te final step is to subtract discretionary accruals of the control firm from those of the sample firm. Hence, the formula is for the Performance adjusted Jones (1991) and Modified Jones (1995) model discretionary accruals (DA) is:

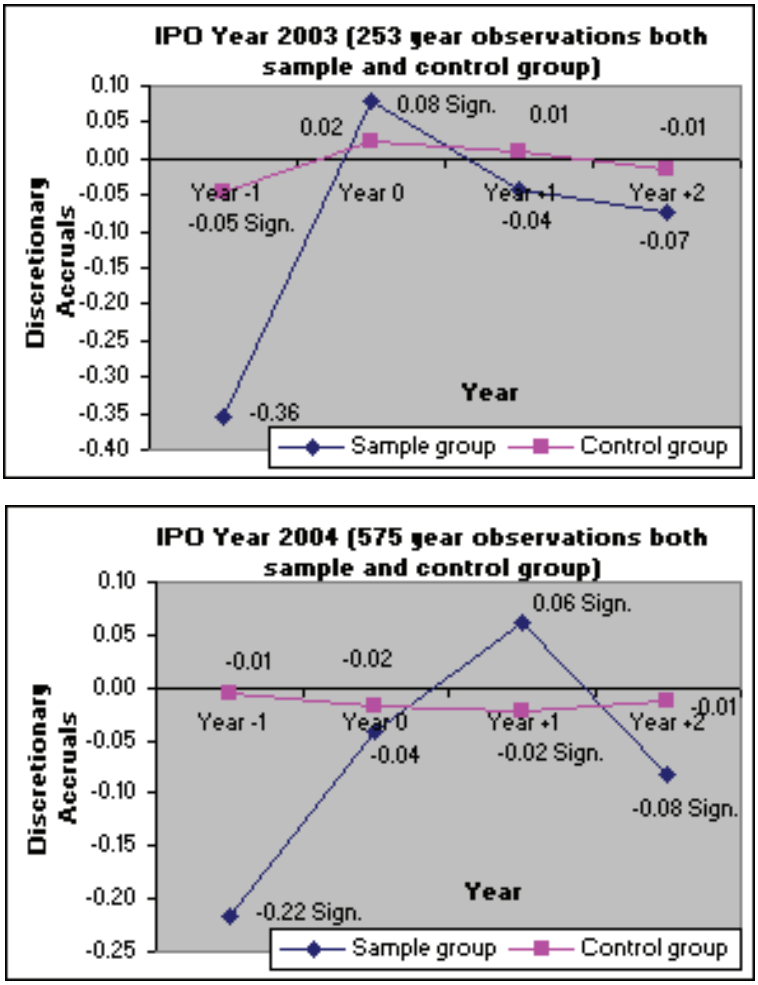
$$DA\tau = SampleDA\tau - ControlDA\tau \quad (6)$$

5 Results and analysis

5.1 Indications of earnings management

A Paired-Sample T Test is used to determine if discretionary accruals (from equation 6) are significantly positive. The level of statistical significance is 0.05% or lower and the level of statistical reliability is 95%. The tests give no significantly positive discretionary accruals among the firms that issued an IPO in the years 2001 and 2002. For the other two years the tests show consistent evidence that significantly positive discretionary accruals are present in year 0 of firms that issued an IPO in 2003, and in year +1 of firms that issued an IPO in 2004. The results are robust to additional tests, of which figure 2 gives an example. This figure shows that discretionary accruals of the control group (not performance adjusted) in year 0, are 0.06 lower than that of the sample group (performance adjusted). For issuing year 2004 the accruals of the control group in year +1 are significantly negative (-0.02), while those of the sample group are significantly positive (0.06). The results of the Performance adjustment Jones (1991) model give consistent results. In addition, for both models count that in 2003 and 2004 significantly positive discretionary accruals undergo reversal in year +2 and become negative.

Figure 2 - Comparison of discretionary accruals between the sample and the control group



5.2 Exceptionally high earnings in excess of operating cash flow

Accruals of year 0 of issuing year 2003 and year +1 of issuing year 2004 are separated into different quintiles. The quintile with the lowest discretionary accruals is called quintile 5 the "conservative quintile". The quintile with the highest is called quintile 1 the "aggressive quintile". This procedure is consistent with Teoh et al. (1998). Figure 3 shows that quintile 1 and 2 have high significantly positive discretionary accruals in year 0. Average earnings of IPOs in quintile 1 are $ 5,483 million positive in year 0, operating cash flows are $ 2,376 million negative. Earnings in quintile 2 are $ 3,816 million positive in year 0; a grown of 73% compared with the prior year. Operating cash flows decreases with 28% to a level of $ 3,965 million. The figure shows that in both quintiles 1 and 2 are exceptionally high earnings in excess of operating cash flow and thus are the IPOs in these quintiles, under suspicion of opportunistic earnings management. Earnings in the other quintiles do not grow in excess of operating cash flow and are not under suspicion of opportunistic behaviour.

The results for the year 2004 indicate that the median earnings of quintile 1 is $ 2,094 million positive in year +1 (a reduction of 10% compared to year 0) while operating cash

flows in this year is $ 920 million negative (a reduction of 277%). The statistics of quintile 1 show indications that firms increase earnings in excess of operating cash flows, to prevent earnings from a great reduction. This is consistent with the opportunistic perspective. The other quintiles have no exceptionally high earnings in excess of operating cash flow.

Figure 3 - Discretionary accruals, earnings and operating cash flows of IPOs from 2003

Earnings management in year 0 of firms that issued IPO in 2003	Mean discretionary accruals				Mean earnings per million dollar				Mean op. cashflow per million dollar			
	-1	0	+1	+2	-1	0	+1	+2	-1	0	+1	+2
Quintile 1 most aggressive	-0.22*	0.37*	-0.03*	-0.20*	5,604	**5,483** -2%	7,589 38%	**-81** -101% -101%	7,351	**-2,376** -132%	9,187 487%	5,136 -44% 316%
Quintile 2	-0.06	0.12*	-0.02	-0.01*	2,208	3,816 **73%**	5,750 51%	2,806 -51% **-26%**	5,505	3,965 **-28%**	9,453 138%	6,902 -27% 74%
Quintile 3	-0.24*	0.02	0.00	-0.05	4,553	4,658 2%	2,892 -38%	2,892 0,0% -38%	4,367	5,815 33%	5,563 -4%	5,841 5% 0%
Quintile 4	-0.06	-0.06*	-0.08*	-0.01*	7,272	6,768 -7%	5,477 -19%	3,568 -35% -47%	4,475	14,840 232%	7,953 -46%	15,267 92% 3%
Quintile 5 most conservative	-0.32*	-0.20*	-0.07*	-0.04	5,386	6,674 24%	5,578 -16%	3,814 -32% -43%	5,328	13,543 154%	4,834 -64%	10,615 120% -22%

Key to symbols:

- The difference between year +1 and +2
- The difference between year +0 and +2
- *: discretionary accruals are significant
- **Bold**: important figure

Note : there are more or less 25 IPOs in each year in each quintile (containing IPO year observations from both performance adjusted models).

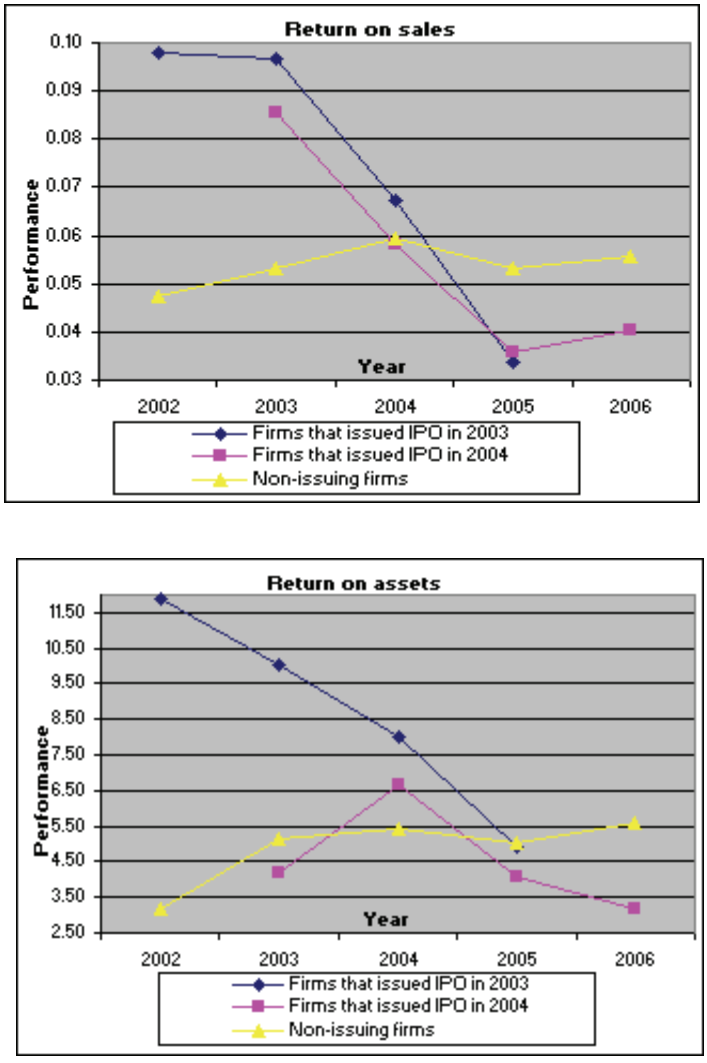
5.3 Exceptionally low future earnings

Figure 3 shows that in quintile 1 a positive relationship between earnings of IPOs with positive discretionary accruals, and negative discretionary accruals and exceptionally low earnings in post-IPO periods is present. Earnings become $ 81 million negative and accruals undergo reversal in year +2. Firms within this quintile seem to have crossed the level of equilibrium, since earnings did not express the real future performance. For the year 2004 earnings management is pronounced in year +1 but in year +2 there are no exceptionally low future earnings. Because there is no information available for later periods than year +2 it is difficult to interpret the results, since it is possible that earnings will decline in year +3.

5.4 Inferior post-earnings management operating performance

To rule out the possibility that poor performance is a general problem and not explicit related with IPOs, this paper tests if the post-issue operating performances of IPOs is inferior compared to non-issuers. Figure 4 presents the ROS and ROA of the sample group of issuing year 2003 and 2004. Consistent with some prior studies (Teoh et al. 1998; Roosenboom et al. 2003) there is evidence of inferior post-issue operating performance by issuing firms. While the operating performance of non-issuing firms remains at a constant level, for IPOs it declines in post-issuing years 2004, 2005 and 2006 and stays behind.

Figure 4 - The operating performance of issuers and non-issuers



Note: The number of IPO year observations of firms that issued IPO in 2003 is 506, and for 2004 1,150 (containing IPO year observations from both performance adjusted models).

Figure 5 presents the ROS and ROA for firms that issued IPO in 2003 and 2004 sorted per quintile. The results show that both ROS and ROA of quintile 1 of IPOs from 2003 undergo an exceptional decline. This quintile presents a decline in ROS from year 0 to year +2 of -128%. ROS becomes 0.03 negative in year +2, while ROS of the other quintiles remains

positive. ROA declines by -69% from year 0 to year +2 to a level of 3.39. The other quintiles have a maximum decline in ROA of -57% from year 0 to +2 (quintile 5) and a minimum ROA of 5.13 (quintile 4). Quintile 2 seems to decline "normal" compared to the other quintiles; a decline from year 0 to year +2 of -25% in ROS and -32% in ROA. It seems that quintile 1 has both accruals that undergo reversal and, compared with the other quintiles, exceptionally inferior post-earnings management operating performance.

ROS of quintile 1 of IPOs from 2004 decline to a level of 0.02 in year +2, which is considerable low compared to the other quintiles. Quintile 2 has the highest ROS of 0.06 and quintile 4 and 5 have a ROS of 0.03. ROA of quintile 1 declines to 2.05 which is again low compared with the other quintiles. ROA of quintile 2 is also low with 2.41, however, ROS is the highest of all quintiles with 0.06. The results are consistent with those of firms that issued IPO in 2003, namely that quintile 1 has both accruals that undergo reversal and, compared with the other quintiles, exceptionally inferior post-earnings management operating performance. There is thus a positive relationship between significantly positive discretionary accruals that undergo reversal and become negative, and inferior operating performance in later periods, in quintile 1 of both 2003 and 2004 IPOs. IPOs in other quintiles have also inferior post-earnings management operating performance, but not so exceptionally high than quintile 1. A possible reason that the other quintiles, without the presence of opportunistic behaviour, also have poorer performances on the long run, could be that these IPOs have time their offering in a period of peak performance, which could not stand in the long run (Fan 2007, 21).

Figure 5 - Discretionary accruals, earnings and operating cash flows sorted per quintile

Firms that issued IPO in 2003	Mean return of sales in %				Mean return of assets in %			
	-1	0	1	2	-1	0	1	2
Quintile 1 most aggressive	0.12	0.10 -19%	0.06 -33%	**-0.03** -142% **-128%**	16.08	10.84 -33%	8.81 -19%	**3.39** -62% **-69%**
Quintile 2	0.04	0.06 46%	0.06 11%	0.04 -32% **-25%**	6.43	7.99 24%	7.39 -7%	5.40 -27% **-32%**
Quintile 3	0.07	0.08 18%	0.04 -47%	0.05 11% -41%	10.34	9.08 -12%	7.47 -18%	5.40 -28% -41%
Quintile 4	0.14	0.12 -18%	0.08 -35%	0.04 -45% -64%	12.19	9.94 -18%	8.31 -16%	5.13 -38% -48%
Quintile 5 most conservative	0.12	0.13 8%	0.09 -33%	0.06 -31% **-54%**	14.26	12.22 -14%	8.11 -34%	5.26 -35% **-57%**

Firms that issued IPO in 2004	Median return of sales in %				Median return of assets in %			
	-1	0	1	2	-1	0	1	2
Quintile 1 most aggressive	0.10	0.05 -53%	0.03 -25%	**0.02** -30% -47%	10.78	12.15 13%	8.70 -28%	**2.05** **-76%** -83%
Quintile 2	0.10	0.08 -20%	0.05 -45%	**0.06** 35% -25%	-0.02	5.68	4.92 -13%	**2.41** -51% -58%
Quintile 3	0.08	0.08 -1%	0.03 -65%	0.05 82% -36%	2.19	7.69 251%	6.89 -10%	6.19 -10% -20%
Quintile 4	0.09	0.05 -43%	0.05 -5%	**0.03** -37% -40%	5.19	8.25 59%	4.12 -50%	3.64 -12% -56%
Quintile 5 most conservative	0.05	0.03 -41%	0.02 -35%	**0.03** 67% 9%	2.74	5.30 93%	0.66 -87%	4.02 506% -24%

Note: the key to symbols and the number of IPOs per quintile are the same as in figure 3.

5.5 Opportunistic earnings management

This paper finds a positive relationship between significantly positive discretionary accruals and exceptionally high earnings in excess of operating cash flow, in quintile 1 and 2 of firms that issued an IPO in the year 2003, and in quintile 1 of firms that issued IPO in 2004. The results also indicate that only firms in quintile 1 of IPO year 2003 have underperforming future earnings, and herewith could properly not have managed their earnings to the level of equilibrium. And third, despite inferior post-issue operating performance is pronounced for the complete sample of IPOs, there is only evidence of a positive relationship between exceptionally inferior post-earnings management operating performance and discretionary accruals that undergo reversal, in the most aggressive quintiles. This paper interprets the results of these three tests, that only the IPOs in the most aggressive quintiles of both issuing year 2003 and year 2004, meet the conditions outlined in section 2 and are thus under suspicion of opportunistic behaviour.

The IPOs that are under suspicion of opportunistic behaviour represents more or less 20% of the firms that issued IPO in 2003 and 2004. And more or less 10% of the total sample (4 years). Among others, Teoh et al. (1998) and Roosenboom et al. (2003) found higher percentages and concluded that opportunistic behaviour is strongly pronounced among IPOs. The results of this paper challenge this traditional view and add evidence to support the more recent view (Ball and Shivakumar 2006; Fan 2007) that the appearance of discretionary accruals is not a result of managerial opportunism, but appear because they are endogenous to IPOs. The results suggest that the information perspective on earnings management is more pronounced.

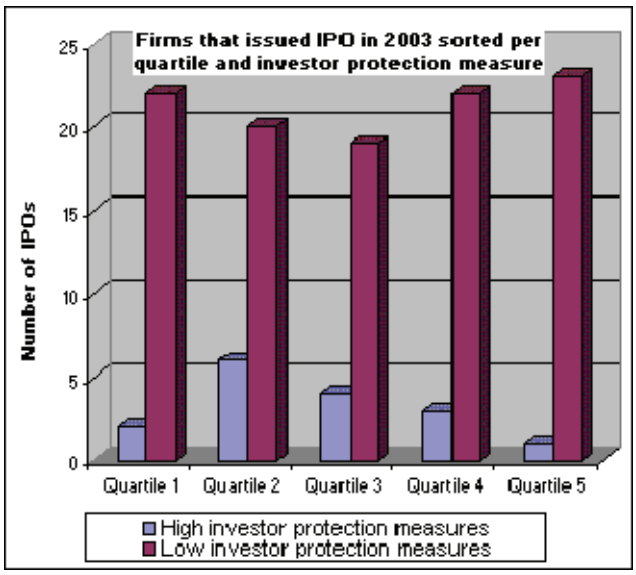
A recommendation for further research is to examine the negative effects of opportunistic behaviour behaviour for investors. For example if investors are aware that it is used to

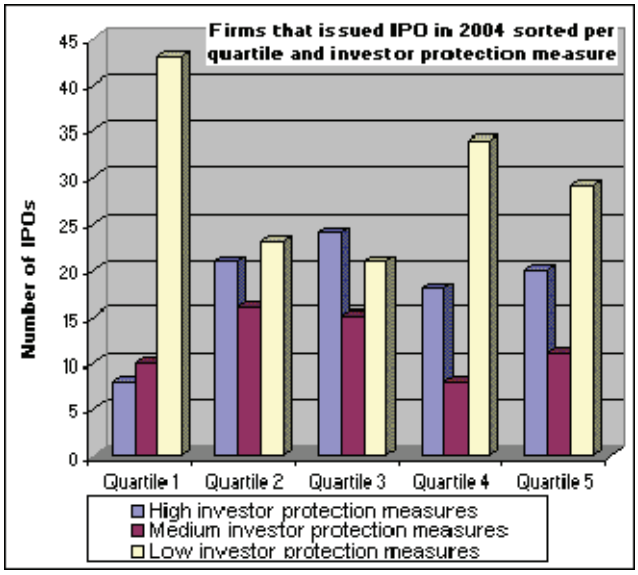
manipulate them. And when they are aware, if they make adjustments in the stock value or alternatively, that the costs of opportunistic behaviour are too small that a change of behaviour is necessary. Also the implications of informative earnings management for both the firm and investors, is a subject that demands more research. For example if investors upwardly adjust the firms' value, when they realise that discretionary accruals are used to inform them instead of manipulating them. An other recommendation for future research is the effect of conservative accounting on future earnings and operating performance. This paper, and most other prior earnings management research, mainly focus on the relationship with aggressively accounting.

5.6 Discretionary accruals and investor protection regulations

The total sample consists of 512 firms in 24 countries worldwide (on 25 stock markets). The country with the highest investor protection measure is Singapore with a rate of 9.3, the lowest is Greece with a rate of 3.0. The tests show, consistent with Leuz et al. (2003), that discretionary accruals are higher in low investor protection countries. Those of the medium investor protection regulations are positive but less so than those of low investor protection regulations. Discretionary accruals of the high investor protection regulations are almost equal to zero or negative. The next step is to analyse the relationship between different discretionary accruals quintiles and investor protection regulations. The results are outlined in figure 6. IPOs from issuing year 2003 are sorted in two investor protection groups and IPOs from issuing year 2004 in three groups. When strong investor protection regulations would counter opportunistic behaviour, the expectation is that there are exceptionally more IPOs in low investor protection countries in quintile 1 compared to quintile 5. An other expectation is that there is a gradually descending line, from many IPOs in low investor protection regulations in quintile 1 to less in quintile 5. Figure 6 shows that in quintile 1 of issuing year 2003 there in more or less an equal number of IPOs in weak investor protection countries, as there is in quintile 5. And there are more IPOs in strong countries than there are in quintile 5. Issuing year 2004 shows no gradually descending line. For example, the number of weak investor protection countries declines in quintile 2 compared with quintile 1, but rises again in quintile 4. And the number of medium investor protection countries rises in quintile 2 compared with quintile 1, but declines again in quintile 4. This paper interprets these statistics that evidence for a positive relationship between weak investor protection regulations and opportunistic earnings management is far from unequivocal. This seems to be consistent with most IPO research that found evidence of opportunistic earnings management in high investor protection countries (for example in the U.S.). It seems that investor protection rules have their limits which prevent opportunistic earnings management in the context of IPOs. Because this conclusion is only based on one observation, more research is necessary to see whether it is generalisable.

Figure 6 - The distribution of investor protection regulations per discretionary accruals quintile





6 Summary and conclusions

Based on a sample of 512 companies in 24 countries worldwide, and using better accrual estimating models and a more recent sample than most prior research, this paper first argues that IPOs do engage in earnings management. However, it seems that earnings management is less pronounced than prior research has suggested (Teoh et al. 1998; Roosenboom et al. 2003), because earnings management is only found in two of the four issuing years. These results show that both investors and standard setters should interpret results of prior research with care.

Second, based on three selected conditions there are indications that the use of earnings management is driven by self-interest. But because IPOs that are under suspicion of such behaviour only represent a small proportion of the total sample (+-10%), this paper adds more evidence to the recent view (Ball and Shivakumar 2006), that the appearance of discretionary accruals is not a result of managerial opportunism, but occurs because discretionary accruals are endogenous to IPOs. The results challenges the opportunistic perspective on earnings management and suggest that the information perspective on earnings management is more pronounced.
Third, the results show that strong aggressively managed earnings by IPOs, “predict” excessively lower future earnings and inferior post-issue operating performance. On the other hand, there is little evidence for this relationship in situations of less aggressively managed earnings.

At last, in continuation of Ahmad-Zaluki et al. (2007) who advised for further investigations about company and environmental factors, the results of this paper add to the growing body of evidence that the pervasiveness of earnings management depends on these factors. The results indicate that there is a positive relationship between low investor

protection regulations and earnings management: discretionary accruals are, on average, higher for countries with low investor protection regulations. However, no positive relationship is signalled between opportunistic behaviour and low investor protection regulations. It seems that stronger enforcement of investor protection laws do not counter opportunistic behaviour. Therefore should investors not rely on investor protection rules excessively, when investing in an IPO. This conclusion complements the findings of Leuz et al. (2003, 9).

The relevance of these results can be summarised as follows. First, the results show that earnings management, opportunistic behaviour specifically, can be very costly and can be predicted by discretionary accruals around the IPO process. This helps issuing firms about how discretionary accruals affect the post-issue performance and affect the cost of equity. Second, accounting standard setters and regulators who are interested in earnings management behaviour, see that care must be exercised in interpreting the effectiveness of investor protection rules with respect to opportunistic behaviour. They may re-consider their laws and regulations to make them more effective. And finally, investors and other stakeholders notice that earnings management is not all-pervasive. And in situations that it is present, it is far from unequivocal that it is used to manipulate accounting figures.

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