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Earnings management and performance of French IPO companies

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In this paper, we examine the impact of discretionary current accruals on the performance of French IPO companies. We first note income-increasing earnings management in the first year as a public company and not in the year before the IPO (Initial Public Offerings). Based on a sample of 139 French IPOs over the period 1999 to 2007, including 38 failures, we also document that companies associated with aggressive earnings management in the IPO process, tend to suffer from subsequently poor returns and to delist for performance failure after IPO. However, we find no evidence to suggest that the level of initial return is negatively related to discretionary current accruals.

Key words: Initial public offerings, earnings management, initial return, long-run stock market performance, delisting risk.

INTRODUCTION

Accounting principles grant their managers certain latitude to engage in accounting practices, such as earnings management, especially in a context rich in information asymmetry as Initial Public Offerings. Prior studies report that IPOs manage their earnings aggressively and opportunistically through income-increasing accruals to increase offering proceeds in the IPO year. But they may face poor post-IPO stock returns (Pastor-Llorca and Poveda-Fuentes, 2006; DuCharme et al., 2001, 2004; Roosenboom et al., 2003; Teoh et al., 1998a; Ahmad-Zaluki et al., 2011) and they are more likely to delist for performance failure (Li et al., 2006). Of more, IPO companies that manage their earnings aggressively also put too high a price on the new issues, thereby leading to a decrease in the degree of underpricing (Kim and Park, 2005; Kimbro, 2005). Indeed, Lin and Tian (2012) find that accounting conservatism is negatively associated with the magnitude of IPO underpricing. Thus earnings management could be added among different theories explaining the performance of IPOs in the short term (initial return) and long term (market performance and involuntary delisting).

The present study has been about the case of IPOs in France, a civil law country, characterized by a low index of investor protection (La Porta et al., 2000). Using a sample of 139 French IPOs over the period 1999 to 2007, the results provide evidence of income-increasing earnings management in the IPO-year which proves to be among the causes of long-run market underperformance and involuntary delisting risk. However, we find no evidence to suggest that the level of initial return declines with earnings management.

The remainder of this paper is organized as follows: Theoretical background and hypotheses for the study are presented. The research methods are outlined, and selected sample and data are described. Finally, the results of the empirical study and conclusion are presented.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

IPO earnings management

According to Cormier and Martinez (2006), in the context

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of IPOs in France, firms issuing forecasts in their prospectuses are more inclined to manage earnings 1 year after an IPO compared to non-forecasters firms. Most prior studies of earnings management in the context of IPOs (DuCharme et al., 2001; Roosenboom et al., 2003 ; Teoh et al., 1998a; Ahmad-Zaluki et al., 2011) suggest that companies opportunistically boost their earnings upward through income-increasing accruals in the IPO process and the quarters immediately after the IPO. There are several reasons. First, to increase in the offer price and in owners' wealth in the short-term. Second, to maintain a high market price after the IPO given that owners or original entrepreneurs and venture capitalists may wish to sell some of their shares in the secondary market at the end of the lockup period. Finally, to avoid a rapid decline in earnings and stock price immediately after IPO that can in turn cause potential class action lawsuits against the IPO companies and investment bankers (Teoh et al., 1998a). Despite the fact that the increased stakeholder scrutiny and monitoring by auditors and others may reduce the use of aggressive income-increasing earnings management (Ball and Shivakumar, 2008), we estimated that France, civil law country, is a favorable terrain for earnings management (Leuz et al., 2003; Daske et al., 2006; Han et al., 2010), especially in a context rich in information asymmetry, the initial public offering. Hence the following hypothesis;

H1: *French IPO companies opportunistically manage their earnings upward through income-increasing accruals in the IPO year.*

Initial return

Impact of earnings management on the initial return of IPOs

Based on a sample of 171 IPOs between 1982 and 1987, DuCharme et al. (2001) find a positive correlation between pre-IPO earnings management and initial firm value, without specifying which price is more influenced by the inflated earnings, the firm's closing price or the offer price on the day of issue, or both. Consistent with their prediction (the issuer's greed hypothesis), Kim and Park (2005) find that SEO (Seasoned Equity Offers) firms that employ aggressive accounting decisions also push their offer prices up more aggressively leading to a decrease in the degree of underpricing. Indeed, they argue that the offer day closing price does not increase as much as the offer price. In her study, Kimbro (2005) explores the role of DCA (Discretionary Current Accruals) in prospectus information of 691 A-shares IPOs in China during the period 1995 to 2002 and she finds a negative relationship between earnings management and initial returns. She argues that, in the Chinese environment, firms use income-decreasing accruals (conservative accounting) in prospectus financial statements to increase underpricing and to compensate for higher agency costs and adverse selection problems caused by continued state ownership, regulatory, and political factors. All these arguments lead us to the following hypothesis:

H2: *Earnings management in French IPO companies is negatively associated with IPO initial return (underpricing).*

Control variables: other factors influencing initial return of IPO companies

Seven factors are investigated, all identified in prior literature as potentially influencing the level of IPO initial return. Higher quality auditors play a significant role in reducing information asymmetry between issuers and potential investors and therefore lead to a lower degree of underpricing (Beatty, 1989; Balvers et al., 1988; Michaely and Shaw, 1995; Holland and Horton, 1993; Broye, 2001).

However, Ritter (2011) do not believe that underpricing is largely driven by adverse selection and asymmetric information, especially in some periods, such as the dotcom bubble or hot periods. Indeed, empirical studies show that the level of underpricing fluctuates between different years (Ibbotson and Jaffe, 1975). One explanation for this fluctuation may be the fact that there are "hot" and "cold" IPO markets (Ibbotson et al., 2001). When the market is "hot", the average level of underpricing rises and the amount of firms going public increases. Subsequently the number of IPOs continues to grow, but the level of underpricing decreases. Thus the market becomes "cold" with fewer firms going public and very low underpricing (Lowry and Schwert, 2002).

Megginson and Weiss (1991) and Lin and Smith (1998) find that venture capital backed IPOs suffer less underpricing than no venture capital backed IPOs, supporting the certification role played by VCs (Venture capital). Venture capitalists not only provide the necessary capital but their presence also signals the firm's quality as they are better monitors of the firm, then this will be recognized by capital markets through lower IPO underpricing (Barry et al., 1990). However, Francis and Hasan (2001) and Lee and Wahal (2004) find that VC-backed IPOs are more underpriced than non-VC-backed IPOs, which is consistent with the 'grandstanding hypothesis' proposed by Gompers (1996). According to this hypothesis, VCs will grandstand by taking younger companies public and allowing greater underpricing. Indeed, VCs are willing to bear the cost of underpricing because taking a company public signals firm quality and establishing a good reputation is critical to future fund raising (Elston and Yang, 2010). For France, Chahine et al. (2007) find that French VC-backed IPOs show higher underpricing than IPOs without VC backing. However, Chahine and Filatotchev (2008) find that when VCs are affiliated to the lead underwriters, the level of underpricing was lower than that for IPOs backed by non-

affiliated VCs. These contradictory arguments suggest that the expected directional relationship between IPO underpricing and the VC industry is indeterminate.

Leland and Pyle (1977) show that retained ownership can signal issue quality. In other words, insiders may retain a large stake of the firm to send out a positive signal to the market that they are confident about the future prospects of the company. Empirical support for this theory is provided by Keloharju and Kulp (1996). According to Hughes (1986), insider ownership and IPO underpricing will have a substitution signal effect, the greater is the fractional insider ownership, the less is the information asymmetry, and the lower the need to underprice a new issue. In another perspective based on the signalling models of Allen and Faulhaber (1999), Grinblatt and Hwang (1989) and Welch (1989), insider ownership and IPO underpricing constitute a pair of reinforcing signals. Therefore, underpricing and insider ownership are positively related to each other (higher quality firms underprice more than do those of lower quality) (Su, 2004). Thus, the expected directional relationship between IPO underpricing and retained ownership is indeterminate.

Beatty and Ritter (1986) find that issue proceeds is one of the proxies that capture ex-ante uncertainty because better established firms often make larger issues and are generally less risky than those making smaller issues. Issue size has been used as a proxy for ex-ante uncertainty in other studies as well (Amihud et al., 2002; Kiymaz, 2000; Ljungqvist, 1997; Samarakoon, 2010) and it was found to be negatively associated with IPO underpricing.

Firm age is a firm-specific control variable that measures the difference between the foundation year of the firm and the year of IPO. The longer the operating history of a company, the more likely it has more information available to the public and a lower level of information asymmetry and ex-ante uncertainty about firm value, suggesting a reduced level of underpricing. This is empirically confirmed by Su and Fleisher (1999), Loughran and Ritter (2004), Chahine (2008) and Engelen and Essen (2010), who all find a negative relationship between firm age and the level of underpricing.

Finally, the extent of underpricing for pure primary offerings is lower than the extent of underpricing in the case of mixed offerings. According to Prasad (1994), investors may be viewing mixed offerings as more risky investment than pure primary offerings[1].

The long-term performance of IPOs

Earnings management and post-IPO long run stock market performance

Several empirical studies have focused on the relationship between earnings management and post-IPO performance (Abdul Rahman and Wan Abdullah, 2005; DuCharme et al., 2001, 2004; Roosenboom et al., 2003; Teoh et al., 1998a, 1998b; Chang et al., 2010; Ahmad-Zaluki et al., 2011). However, for France no study has tested this relationship until now.

Teoh et al. (1998a) note that issuers of IPOs report earnings in excess of cash flows by taking positive accruals. They find that issuers with unusually high accruals in the IPO year experience poor stock return performance in the three years thereafter. More precisely, aggressive earnings management companies, with higher income-increasing accruals in the IPO year have a three-year after-market stock return of about 20% less than conservative earnings management companies. They stipulate that this aggressive earnings management is intended to lead investors to be overly optimistic about the issuer's prospect. As information about the firm is revealed over time, disappointed investors may lose their optimism, and they will revalue the firm down to a more justified level. A similar negative relationship between the size of the DCA "Discretionary Current Accrual" in the IPO year and stock returns over the next 3 years is found for Dutch (Roosenboom et al., 2003), Spanish (Pastor-Llorca and Poveda-Fuentes, 2006) and Malaysian IPOs (Ahmad-Zaluki et al., 2011)[2]. All these arguments lead us to the following hypothesis:

H3: *French IPO companies in which managers engage in aggressive earnings management experience poor long-run stock return performance.*

Earnings management and delisting risk of IPOs

With a sample of IPOs from 1980 to 1999, Li et al. (2006) find that the degree of earnings management possesses significant predictive power on IPO failure. They find companies associated with aggressive earnings management are more likely to delist for performance failure, and tend to delist sooner. However, IPO companies associated with conservative earnings management are more likely to be merged or acquired and earn positive abnormal returns. Indeed, Kim and Pevzner (2010) find that conservatism is associated with lower probability of future bad news.

In fact, aggressive earnings management would be beneficial for low-quality IPOs because they receive excessive proceeds compared to the real value of their issues (DuCharme et al., 2001). Given that earnings

[1]Pure primary offerings – where only the company offers shares to the public. Mixed offerings – where both the company and some existing shareholders offer shares to the public in the same offering (Prasad, 1994).

[2]According to Ahmad-Zaluki et al. (2011), the relationship between earnings management and post-IPO performance is contingent on environmental factors in Malaysia. More precisely, IPOs issued during non-crisis years, income-increasing IPO earnings management is less pronounced and post-IPO market-based performance is not associated with the level of IPO-year earnings management. However, for IPOs during the Asian crisis period, aggressive (income-increasing) earnings management IPO companies performed less well than their more conservative counterparts.

management have detrimental impact on the firm and shareholders in the post-IPO phase, good companies with solid earnings and prospects have lower incentives to manipulate accounting numbers. Thus, the degree of earnings management in the IPO process should decrease with the quality of IPO, while the quality of IPO is inversely related to future delisting risk (Li et al., 2006). Hence the following hypothesis;

H4: *French IPO companies in which managers engage in aggressive earnings management are more likely to be involuntarily delisted from the stock exchanges.*

Control variables: other factors influencing the long-term performance of IPOs

Several factors are identified in prior literature as potentially influencing the level of IPO long-run performance. Hot periods, characterized by high IPO initial returns, are associated with excessive demand for IPOs. Indeed, managers will likely to issue equity in order to take advantages of the opportune time to lower the cost of capital. However, this high demand subsequently attracts new issues of a lower quality being taken to market. That is why Ritter (1991) and Loughran and Ritter (1995) find that equity-issuing firms perform poorly following the issue. They report that companies that issue IPOs when issuing activity is high and investors are prepared to pay a relatively high price for issued stock, yield low returns for the investors in the long run. Hot issue market and IPO underperformance is also documented and approved by Helwege and Liang (2004), Loughran et al. (1994), Hoechle and Schmid (2007) and Sahoo and Rajib (2010).

Brav and Gompers (1997) find that the presence of venture capital in the ownership of firms going public has been associated with improved long-term performance. The results of Jain and Kini (2000) indicate that venture capitalist involvement improves the survival profile of IPO issuers. Indeed, they monitor the firm on a day to day basis, assist management, and often occupy a seat in the board of directors (Suchard, 2009). Thus, we expect that VC-backed IPOs are less likely to fail and to underperform than non-VC-backed IPOs.

Miller (1977) suggests that divergence of opinion or uncertainty about an IPO can attract more overvaluation on the listing day, followed by underperformance in the long run. Uncertainty in quality and pricing of IPOs create a difference in opinion among both the optimistic and pessimistic investors, resulting in both overvaluation at the time of initial public offerings, and long-run underperformance. Several studies provide empirical support for the divergence of opinion hypothesis (Gao et al., 2006; Diether et al., 2002; Houge et al., 2001; Sahoo and Rajib, 2010). Thus, we expect a positive relationship between the magnitude of divergence of opinion among IPO investors and the long-run underperformance[3].

After the IPO, the share of capital retained by the original entrepreneurs decreases. So the interests of the original entrepreneurs and shareholders become less aligned. This contributes to increase conflicts of interest and agency costs (Jensen and Meckling, 1976). The issuing company may bear the consequences in post-IPO phase. This explains the results of Jain and Kini (1995) who found a positive and significant relationship between the percentage of capital retained by the original entrepreneurs and post-IPO operating performance. However, this argument is not shared by all authors as there are those who argue that the entrenchment theory is one of the causes of firm's underperformance (Morck et al., 1988; Davies et al., 2005). Indeed, Demsetz (1983) and Fama and Jensen (1983) stipulate that a high insider ownership may be associated with adverse entrenchment effects that can lead to an increase in managerial opportunism at the expense of outside investors. Thus we expect a positive relationship between the share of capital retained by insiders after the IPO and the long-term performance of IPOs according to the results of Jain and Kini (1995), and a negative relationship in accordance with the entrenchment theory.

According to previous studies, we expect that worst performing and failed IPOs in the long term are those who are young (Ritter, 1991; Demers and Joos, 2007; Li et al., 2006), small (Keloharju, 1993; Goergen et al., 2007), highly leveraged (Eckbo and Norli, 2005; Demers and Joos, 2007; Li et al., 2006) and less profitable (Fama and French, 2004; Li et al., 2006) at the IPO time.

METHODS

Measure of earnings management

Consistent with previous studies (DuCharme et al., 2001, 2004; Roosenboom et al., 2003; Ahmad-Zaluki et al., 2011), DCA discretionary current accruals[4] are used to evaluate earnings management of IPO companies and we adopt « Modified Jones » model[5] for detecting earnings management (Teoh et al., 1998a; Roosenboom et al., 2003; Ahmad-Zaluki et al., 2011).

The Modified Jones model separates current accruals[6] into nondiscretionary and discretionary components. Nondiscretionary accruals are estimated from a cross-sectional model and the discretionary accruals represent the residuals. Expected current accruals for an IPO firm in a given year are estimated from a cross-sectional regression in that year of current accruals on the change

[3]We use *Ex-ante uncertainty* as proxy for after-market price variability in the empirical model to find support for the divergence of opinion hypotheses.

[4] According to Teoh et al. (1998a) and Teoh et al. (1998b), managers would have more discretion over short-term rather than over long-term accruals.

[5] Dechow et al. (1995) suggest that the « Modified Jones» model is the most powerful model for to estimate earnings management.

[6] We estimate current accruals which are defined as the change in noncash current assets minus the change in operating current liabilities (Teoh et al., 1998a ; Roosenboom et al., 2003);

CA = Δ [current assets – cash] - Δ [current liabilities – current maturity of long-term debt]

in sales using a portfolio comprising all two-digit SIC code peers[7] (Teoh et al., 1998a) available on Orbis and Thomson one Banker databases. Thus, for the expected current accruals of an IPO firm *i* in year *t*, we run the following cross-sectional OLS regression:

$CA_{j,t} / TA_{j,t-1} = \alpha_0 (1/TA_{j,t-1}) + \alpha_1 (\Delta Sales_{j,t}/TA_{j,t-1}) + \varepsilon_{j,t}$ j Є estimation sample

Δ Sales is the change in sales, and TA is total assets. We evaluate the nondiscretionary component of total current accruals for each IPO firm *i* in each year *t*, using the estimated coefficients ($\acute{\alpha}_0$, $\acute{\alpha}_1$) from each industry-year estimation sample:

$NDCA_{i,t} = \acute{\alpha}_0 (1/TA_{i,t-1}) + \acute{\alpha}_1 ((\Delta Sales_{i,t} - \Delta Tr_{i,t})/TA_{i,t-1}))$

$\Delta Tr_{i,t}$ is the change in trade receivables[8] in year *t* for issuer *i*. Discretionary current accruals, $DCA_{i,t}$, for IPO firm *i* for year *t* are represented by the residual:

$DCA_{i,t} = CA_{i,t} / TA_{i,t-1} – NDCA_{i,t}$

This study includes 13 two-digit SIC groups of 11 different industries: (1) Computer Hardware and Software, (2) Chemical Products, (3) Paper and Paper Products, (4) Electronic Equipment, (5) Transportation equipments,(6) Scientific Instruments, (7) Communications, (8) Durable Goods, (9) Retail, (10) Real Estate, (11) Engineering, Research, Management Related Services. This procedure yields 84 industry-year estimation portfolios during the period, consisting of 1671 seasoned company-years. Industry portfolios vary in size across industries and over time, average 20 constituents and range from the required minimum of 10 constituents to 52 for "Computer Hardware and Software Industries" in 2004[9].

Measure of performance of IPO companies

Following Kim and Park (2005), we define the IPO initial return in the standard manner:

Initial Return = (*Pc – Po)* / *Po*

Where *Pc* is the first closing price and *Po* is the offer price. There continues to be disagreement regarding the measurement of long-run abnormal return performance (Fama, 1998; Mitchell and Stafford, 2000). Barber and Lyon (1997) argued that the BHAR represents the better method and they found that statistical tests of abnormal performance are well-specified only when sample companies are matched against control companies with similar pre-event performance. However, the small number of companies available means there would be a bias caused by the repeated use of matching companies and Teoh et al. (1998a) found that their choice of benchmark did not affect the empirical link between earnings management and subsequent stock market returns. We therefore measure three-year post-IPO abnormal returns relative to the SBF 120 index (Société des Bourses Françaises 120 Index)[10], starting from 4 months[11] after the financial year end up to 40 months after the IPO. The buy-and-hold abnormal return (BHAR) is the difference between the holding-period return of stock 'i' and the market return:

$$BAHR_{iT} = \prod_{t=0}^{T} (1 + r_{i,t}) - \prod_{t=0}^{T} (1 + r_{m,t})$$

In order to distinguish performing IPO companies from those that are not performing, we also develop a logit-based IPO failure model whose depended dummy variable equals to 1 if a firm involuntary delist from an exchange before five post-issue years, and 0 otherwise. We classify as failures all firms making in IPO between 1999 and 2007, that are identified in either the *ORBIS* database or the *Corporatefocus Premium by infinancial* database as delisted firms following bankruptcy and liquidation, excluding firms with missing data and that did not fail during or before their 5th year subsequent to IPO.

Factors influencing levels of performance of IPO companies

Several multivariate specifications are used to investigate Hypotheses 2 through 4, while controlling for additional factors that may influence the performance of IPO companies. Performance of IPO companies is regressed on the level of earnings management and several additional control variables. Estimated regressions models are summarized in the following specification:

Performance = f(*DCA, VC, Retown, Ln(1+Age), Hot, Ln(Proceeds), Audit, Mixed, Market, LnMCap, Lev, Prof, Ex-ante*)

Where; Performance by reference to initial return (*IR*), long-run stock market performance (*BAHR*) and involuntary delisting due to performance failure (*Delist*); *DCA* = IPO year discretionary current accruals as a percentage of lagged total assets; *VC* = dummy variable equal to 1 for an issue backed by venture capitalists, and 0 otherwise; *Retown* = the proportion of shares retained by insiders after the IPO; *Ln(1+Age)* = the natural logarithm of one plus company age in years; *Hot* = dummy variable 1 is used as proxy for IPO issued during hot IPO period, and 0 is used for cold IPOs[12]; *Ln(Proceeds)* = the natural logarithm of proceeds calculated as the offer price times the number of shares offered; *Audit* = dummy variable equal to 1 if the IPO firm has a Big4 auditor, and 0 otherwise; *Mixed* = dummy variable equal to 1 if both the company and some existing shareholders offer shares to the public in the same offering, and 0 otherwise; *Market* = dummy variable equal to 1 if the IPO is introduced on a regulated market, 0 otherwise[13]; *LnMCap* = the natural logarithm of market capitalization calculated as the closing price multiplied by the number of shares outstanding on the first day of the IPO; *Lev* = total borrowings over total assets

[7] The IPO firm and other firms conducting an IPO or SEO firm in the two previous years are excluded from the regression.

[8] Changes in sales are adjusted for changes in trade receivables to reduce the possibility of credit sales manipulation resulting from the timing of revenue recognition (Dechow et al., 1995).

[9] This paragraph has been based on the study of Ahmad-Zaluki, Campbell and Goodacre (2011).

[10] The SBF 120 is an index of the Paris Stock Exchange which groups the 120 largest companies by market capitalization and by trading volumes on NYSE Euronext Paris.

[11] When the publicly traded company releases its first annual report.

[12] Specifically, we want to investigate whether the timing of issue has an effect on performance. The IPO issue period 1999-2000 corresponds to the Internet bubble period and it was considered Hot. The IPO issue period 2001-2007 has been divided into 28 quarters. By ranking all quarters in terms of frequency of issues in France, we classify quarters with more than 12 IPOs as high IPO activity period. In other words, a quarter with less than 12 issues is treated as cold period. We find quarters 1, 4-19 are categorized as low activity period, and quarters 2-3, 20-28 are categorized as high activity period. Our methodology of categorizing quarters as high/low activity period is consistent with Helwage and Liang (2004), Hoechle et Schmid (2007) et Sahoo et Rajib (2010).

[13] Le Premier Marché, le Second Marché, le Nouveau Marché or Euronext-Paris since February 2005 are regulated markets. However le Marché Libre and Alternext are not regulated markets.

Table 1. Discretionary current accruals (% of lagged total assets) over time.

Variable	Year (-1)	Year (0)	Year (+1)	Overall
Mean (%)	-5.19	5.62*	1.13	0.52
Test value	t = 2.132 ** p = (0.035)		t = 1.237 p = (0.219)	F = 3.664 ** p = (0.027)
Quartile 1	-18.67	-6.58	-5.78	-8.88
Median (%)	-1.51	5.10**	2.27	1.33
Test value	z = - 2.732 *** p = (0.006)		z = - 2.006 ** p = (0.045)	X^2 = 8.750 ** p = (0.013)
Quartile 3	9.05	24.41	8.03	12.59
Standard deviation (%)	34.74	31.95	17.50	29.32
Number of companies	105	105	105	315

Kruskal-Wallis test (X^2) for the difference in medians across the three years.
One-way ANOVA test (F) for the differences in means across the three years.
Wilcoxon test (z) for the difference in medians among two consecutive years.
Student test (t) for the difference in means among two consecutive years.
*, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively. The Wilcoxon signed-ranks test is used for the medians and the t-test for means.

in the IPO year; *Prof* = net income divided by total assets in the IPO year; *Ex-ante* = Ex-post standard deviation of the market price for initial twenty trading days (inclusive of listing day) have been used as proxy for ex-ante uncertainty for the after-market performance of IPOs.

SAMPLE SELECTION AND DATA

The initial obtained sample consists of 390 new companies listed on Euronext Paris during the period 1999 to 2007. We have eliminated foreign companies, financial companies[14], transferred companies, companies without the necessary data to calculate accruals and companies with extreme DCA to avoid undue influence by outliers. The final sample is 139 IPO companies (including 38 failures) with 66 in the Computer Hardware and Software Industries sector, 16 in Real Estate, 15 in Electronic Equipment, 11 in Chemical Products, 6 in Durable Goods, 6 in Engineering, Research, Management Related Services, 5 in Communications, 5 in Transportation equipments, 3 in Scientific Instruments, 3 in Retail, and 3 in Paper and Paper Products.

Stock returns and financial data are from Datastream[15]. Accounting data are collected from *Orbis compiled by the Bureau Van Dijk* and *Thomson one Banker* databases. Data related to IPO deal characteristics, pre- and immediately post-IPO ownership structure (pre-IPO venture capital and shares retained by insiders after the IPO) and auditing are obtained from prospectus and post-IPO published annual reports collected from *Corporatefocus Premium* and *Thomson one Banker* databases. Delisting events (following bankruptcy and liquidation) are obtained from the *ORBIS* and the *Corporatefocus Premium by infinancial* databases.

RESULTS

Earnings management and its time-series distribution

How does the average French IPO company use discretionary current accruals over time? Distributions of IPO-year DCA before, in and after the IPO are presented in the Table 1[16]. We find a wide variation across the three years. Indeed, the level of income-increasing earnings management is much higher in year (0), with a median of 5.10% of lagged total assets (significant at the 5% level), which differs from the other years (Kruskal-Wallis test, p-value = 0.013). Such evidence is consistent with Hypothesis 1. The level of DCA declines to 2.27% in the year following the IPO (year +1), and this decline is statistically significant at 5% (Wilcoxon test, p-value = 0.045). We see some evidence that accruals reverse 1 year beyond the IPO year. Almost like the result of Roosenboom et al. (2003) who report a significant DCA reversal to – 4.4% in year +1 in the Netherlands, but not like the results of the United States (reversal in year +2,

[14] But the Properties (Real Estate) sector was included in our sample as in the study of Ahmad-Zaluki et al. (2011).
[15] Stock returns and financial data are available for only 105 IPOs given the lack of data concerning 34 delisted IPOs.
[16] Time-series distribution of earnings management was performed for only 105 IPOs given the lack of data concerning 34 delisted IPOs.

Teoh et al., 1998b; in year +5, Teoh et al., 1998a) and the Malaysian studies (reversal in year +3, Ahmad-Zaluki et al., 2011). We add that the level of IPO-year (year 0) income-increasing earnings management is almost similar than reported for the United States (median = 5.5%, Teoh et al., 1998b; 4.0%, Teoh et al., 1998a) and the Netherlands (3.9%, Roosenboom et al., 2003), but slightly higher than reported for the Malaysia (2.92%, Ahmad-Zaluki et al., 2011).

Descriptive statistics

Table 2 presents descriptive statistics for full sample of 139 French IPOs and separately for active IPOs (101) and delisted IPOs (38). Table 2 also includes univariate comparisons. For each variable, we present the differences between the means and medians of delisted and active IPOs using the independent *t*-test and the Mann-Whitney *U* test, respectively. For discrete variables, differences between proportions are based on the independent test of Chi-2. Consistent with most prior studies and with our first hypothesis, medians (means) DCA are income-increasing in the IPO year, at 8.82% (10.81%) for all IPOs, 5.10% (5.45%) for active IPOs, 15.69% (25.04%) for delisted IPOs, and statistically significant at the 1, 5 and 1% levels, respectively. Further, we find a significant univariate difference in earnings management across samples. Delisted firms are more likely to engage in aggressive earnings management compared to firms who remain active after the IPO (Mann-Whitney *U* test, *p*-value = 0.050). Such evidence is consistent with Hypothesis 4. There also appear to be significant univariate differences in control variables. Delisted firms are smaller (Mann-Whitney *U* test, *p*-value = 0.004), younger (Mann-Whitney *U* test, *p*-value = 0.011), with greater financial leverage (Mann-Whitney *U* test, *p*-value = 0.002), and lower profitability (Mann-Whitney *U* test, *p*-value = 0.000). However, no significant difference was detected between active and delisted IPOs concerning the proportion of shares retained by insiders after the IPO (Mann-Whitney *U* test, *p*-value = 0.225). Focusing next on discrete variables, a large proportion of delisted companies issue IPOs during the internet bubble precisely (Chi-2 test, *p*-value = 0.000), are not VC-backed IPOs (Chi-2 test, *p*-value = 0.036) and have not a good quality audit (Chi-2 test, *p*-value = 0.003). We also find that a large proportion of delisted companies come from unregulated markets (Chi-2 test, *p*-value = 0.019). This confirms the results of Vismara et al. (2012) who find that IPOs that list on Europe's second markets for small and young companies are more likely to be subsequently delisted.

Descriptive statistics provided in Table 2 show that the average age of French IPO companies is 11.52 years, which is broadly similar to the 11 years for Malaysian companies (Ahmad-Zaluki et al., 2011), slightly higher than the 9 years for U.S. companies (Teoh et al., 1998a), but considerably lower than the 35 years for Dutch companies (Roosenboom et al., 2003). The mean proportionate ownership retained by insiders after the IPO is 61.45% (for full the sample), which is lower than some countries (*e.g.*, Malaysia: 77%, Ahmad-Zaluki et al., 2011; U.S.: 71%, Jain and Kini, 1994; UK: 74%, Keasey and Short, 1997) but higher than some (*e.g.*, Thailand: 39%, Kim et al., 2004; Australia: 51%, Balatbat et al., 2004). Firm size, measured as the closing price multiplied by the number of shares outstanding on the first day of the IPO, has a mean value of 159.1715 (€million), while mean leverage, measured as total borrowing to total assets, is 50.40%, which is slightly higher than the mean leverage of U.S. IPOs (42.40%) (Li et al., 2006). 79.14% of all the sample of companies issue IPOs when the market is hot, and over half of delisted companies (52.63%) issue IPOs during the internet bubble precisely. Finally, 46.04% of all companies are VC-backed IPOs.

Univariate analysis

To perform this analysis, each sample of IPO companies is split into three groups. Given that earnings management in our study takes place in year (0) (or the IPO year), we use DCA from this year as the cut off variable to form three equal-sized groups (top tier, middle tier and bottom tier). The conservative tier group has DCA less than -1.08% for the sample of 105 IPOs and less than -2.39% for full the sample (139 IPOs). The aggressive tier group has DCA greater than 15.5% for the sample of 105 IPOs and greater than 21.08% for full the sample. Table 3 shows the mean and the median buy-and-hold returns (BHARs) using a market benchmark. Overall, IPO companies underperform the market benchmark, with a median (mean) three-year BHAR of -12.00% (-9.42%) (significant at the 10% level). This compares to the negative stock-returns found for U.S., U.K. and the Netherlands. Espenlaub et al. (2000) report 3-year stock price performance of -8% to -28% for U.K. IPOs, likewise Gregory et al. (2010) report 3-year stock price performance of -12.6% for U.K. IPOs, Roosenboom et al. (2003) report underperformance of -13% to -30% for Deutch IPOs and Ritter (1991) reports underperformance of -16.67% over the first 3 years for U.S. IPOs. Consistent with the third hypothesis, the long-run underperformance of IPOs is largely centered in the top-tier group of 35 IPO firms with the highest use of DCA in the IPO year (Mann-Whitney *U* test, *p*-value = 0.025). The median (mean) three-year BHAR of this group is equal to -27.57% (-29.85%) and is significant at the 1% level (1% level). However, the bottom-tier group does not experience any significant underperformance. The median long-run stock price performance of this group is equal to -3.96% and is not significantly different from

Table 2. Descriptive statistics of IPO companies in each sample.

IPO company characteristic		All IPOs	Active IPOs (1)	Delisted IPOs (2)	Test-stat for diff
		N = 139	N = 101	N = 38	(1) - (2)
DCA (%)	Mean	10.81***	5.45*	25.04**	t = 1.912*
	Quartile 1	-6.94	-6.07	-8.57	p = (0.062)
	Median	8.82***	5.10**	15.69***	z = -1.961**
	Quartile 3	30.05	24.41	50.48	p = (0.050)
	Stand. dev.	42.43	32.37	59.96	
Retained ownership (%)	Mean	61.45	60.08	65.09	t = 1.408
	Quartile 1	49.00	47.21	53.31	p = (0.161)
	Median	61.59	61.62	60.55	z = -1.215
	Quartile 3	76.41	74.94	80.04	p = (0.225)
	Stand. dev.	18.79	19.40	16.72	
Market value (€million)	Mean	159.1715	187.6680	83.4308	t = -1.235
	Quartile 1	17.8515	22.6283	9.6287	p = (0.219)
	Median	40.2250	48.2208	25.0936	z = -2.883***
	Quartile 3	107.8121	119.2762	62.0293	p = (0.004)
	Stand. dev.	444.3774	503.8572	205.5859	
Profitability (%)	Mean	3.21	7.08	-7.09	t = -3.930***
	Quartile 1	0.39	2.86	-17.63	p = (0.000)
	Median	6.16	7.74	1.15	z = -4.324***
	Quartile 3	11.57	14.30	5.36	p = (0.000)
	Stand. dev.	16.71	13.07	20.73	
Age (years)	Mean	11.52	12.55	8.76	t = -1.629
	Quartile 1	5.00	6.00	3.00	p = (0.106)
	Median	8.00	8.00	6.00	z = -2.557**
	Quartile 3	13.00	13.50	10.00	p = (0.011)
	Stand. dev.	12.303	12.703	10.849	
Leverage (%)	Mean	50.40	46.59	60.54	t = 3.342***
	Quartile 1	34.25	30.87	41.59	p = (0.001)
	Median	50.43	46.24	66.17	z = -3.062***
	Quartile 3	68.23	60.03	83.01	p = (0.002)
	Stand. dev.	22.73	21.18	23.87	
Ex-ante (%)	Mean	-	62.26	-	-
	Quartile 1	-	20.87	-	-
	Median	-	41.72	-	-
	Quartile 3	-	76.13	-	-
	Stand. dev.	-	70.95	-	-
Proceeds (€million)	Mean	-	44.2207	-	-
	Quartile 1	-	5.0251	-	-
	Median	-	9.4535	-	-
	Quartile 3	-	26.6623	-	-
	Stand. dev.	-	119.0121	-	-

Table 2. Contd.

Discrete variables				
Hot (%)	79.14	78.22	81.58	X^2 = 0.189 p = (0.664)
Hot bubble (%)	15.11	1	52.63	X^2 = 57.414*** p = (0.000)
VC (%)	46.04	51.48	31.58	X^2 = 4.404** p = (0.036)
Audit (%)	43.88	51.48	23.68	X^2 = 8.666*** p = (0.003)
Mixed (%)	66.18	68.31	60.52	X^2 = 0.749 p = (0.387)
Market (%)	33.81	39.60	18.42	X^2 = 5.536** p = (0.019)

N = is the number of IPO companies; *DCA* = IPO year discretionary current accruals as a percentage of lagged total assets; *Retained ownership* = the proportion of shares retained by insiders after the IPO; *Age* = company age in years; *Market value* = is the number of shares outstanding after the IPO times the closing price on the first trading day; *Leverage* = total borrowings over total assets in the IPO year; *Ex-ante* = Ex-post standard deviation of the market price for initial twenty trading days (inclusive of listing day) have been used as proxy for ex-ante uncertainty for the after-market performance of IPOs; *Proceeds* = the proceeds calculated as the offer price times the number of shares offered; *Profitability* = net income divided by total assets in the IPO year; *Hot* = is the percentage of IPO companies issued during hot IPO period; *Hot bubble* = is the percentage of IPO companies issued during the Internet bubble period; *VC* = is the percentage of IPO companies backed by venture capitalists; *Audit* = dummy variable equal to 1 if the IPO firm has a Big4 auditor, and 0 otherwise; *Mixed* = dummy variable equal to 1 if both the company and some existing shareholders offer shares to the public in the same offering, and 0 otherwise; *Market* = dummy variable equal to 1 if the IPO is introduced on a regulated market, 0 otherwise. The differences between the mean and median of delisted companies and active companies are based on the independent *t*-test and the Mann-Whitney *U* test, respectively. For discrete variables, the differences between proportions are based on the independent test of Chi-2. *, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively. The Wilcoxon signed-ranks test is used for the medians and the *t*-test for means.

zero. Thus, our results show that French IPO companies undertaking aggressive earnings management to increase short-run earnings, underperform conservative earnings management IPO companies over a three-year holding period. Additionally, Table 3 shows that the percentage of delisted IPO companies in the top tier (39.13%) is significantly higher than the percentage of delisted IPO companies in the bottom tier (19.57%) (X^2= 4.246, *p*-value = 0.039). Consistent with the fourth hypothesis, French IPO companies in which managers engage in aggressive earnings management are more likely to be involuntarily delisted from the stock exchanges.

Table 3 also shows the mean and the median initial return of a sample of 105 IPO companies, and top tier and bottom tier groups. Overall, the mean (median) level of initial return, or underpricing, is 7.50% (4.44%) (significant at the 1% level), which is lower than in many other countries (e.g., Malaysia: 100% (86%), Ahmad-Zaluki et al., 2011; China: 132%, Kimbro, 2005; U.S.: 18.80%, Welch and Ritter, 2002) but broadly similar to the results of studies on France (6.46% (3.36%), Dufour and Molay, 2008; 5.36%, Gajewski and Gresse, 2006; 9%, Sentis, 2001; 22.70%, Chahine, 2008). Concerning European IPOs, Engelen and Essen (2010) find that the average underpricing is 13.12% for 171 IPOs in France; 25.98% for 15 IPOs in Finland; 37.20% for 132 IPOs in Germany; 34.97% for 124 IPOs in Greece; 12.12% for 54 IPOs in Italy and 20.16% for 471 IPOs in United Kingdom. The difference in initial return between high DCA income-increasing and low DCA income-reducing companies is not statistically significant (Mann-Whitney *U* test, *p*-value = 0.128). Thus, univariate analysis does not approve the second hypothesis and it appears that earnings management in French IPO companies is not associated with IPO initial return.

Multivariate analysis

Table 4 reports an OLS regression (1) with the level of initial return as the dependent variable, an OLS

Table 3. Descriptive statistics and univariate comparison of the performance for bottom tier and top tier groups of IPOs.

Variable	N	Category	Mean/ Percentage	Median	Standard deviation	t-stat for diff	z-stat for diff	X^2 test for diff
	105	All IPOs	Mean = -9.42*	Median = -12.00*	σ = 55.68			
BHAR (%)	35	Bottom Tier	Mean = 1.80	Median = -3.96	σ = 62.03	*t* = -2.326**	*z* = -2.238**	n/a
	35	Top Tier	Mean = -29.85***	Median = -27.57***	σ = 51.32	*p* = (0.023)	*p* = (0.025)	n/a
	105	All IPOs	Mean = 7.50***	Median = 4.44***	σ = 14.84			
IR (%)	35	Bottom Tier	Mean = 9.22***	Median = 6.42***	σ = 14.92	*t* = -1.465	*z* = -1.521	n/a
	35	Top Tier	Mean = 4.13*	Median = 3.54	σ = 14.13	*p* = (0.147)	*p* = (0.128)	n/a
	139	All IPOs	Percentage = 27.34	n/a	n/a			
Delist (%)	46	Bottom Tier	Percentage = 19.57	n/a	n/a	n/a	n/a	X^2 = 4.246**
	46	Top Tier	Percentage = 39.13	n/a	n/a	n/a	n/a	*p* = (0.039)

Bottom Tier refers to conservative IPOs with low DCA (income-reducing) and *Top tier* refers to aggressive IPOs with high DCA (income-increasing). *N* is the number of IPO companies. The buy-and-hold abnormal return *BHAR* is three-year post-IPO abnormal returns relative to the SBF 120 index, starting from 4 months after the financial year end up to 40 months after the IPO. The initial return *IR* measured by comparing the first closing price *Pc* with the offer price *Po*: Initial Return = (*Pc – Po)* / *Po*. *Delist* is the percentage of companies involuntary delisted from an exchange during or before their 5th year subsequent to IPO. The differences in mean and median between bottom tier and top tier groups are based on the independent *t*-test and the Mann-Whitney *U* test, respectively. The difference in proportion between bottom tier and top tier groups is based on the independent test of Chi-2. *, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively. The Wilcoxon signed-ranks test is used for the medians and the *t*-test for means.

regression (2) with the level of the long-run stock market performance of French IPOs as the dependent variable and a logistic regression (3) with the likelihood of involuntary delisting from the French Market as the dependent dichotomous variable. Applying OLS or logistic regression requires the absence of multi-collinearity between independent variables. To identify potential problems of multicollinearity among all independent variables in each regression, we established a correlation matrix. In addition we calculated the Variance Inflation Factor (VIF), which also tests for the presence of collinearity between the explanatory variables of each regression. The results show that all the correlation coefficients are below 0.8 which is the limit at which we begin to have a serious problem of multicollinearity. For VIF, we note that the highest VIF[17] is below 10 which is the limit at which we begin to have a serious problem of multicollinearity. Thus, we can assume the absence of any multicollinearity problems among all independent variables in each regression[18].

Table 4 presents results of OLS regression (1). Empirical results indicate that the taken variables *DCA, VC, Retown, Ln(1+Age), Hot, Ln(Proceeds), Audit, Mixed* and *Market* collectively explain the initial return by 13.70% (Adj R^2= 0.137). As opposed to the hypothesis H2, earnings management in French IPO companies is negatively but not significantly associated with IPO initial return (underpricing). This does not corroborate with the results of Kim and Park (2005) and Kimbro (2005) who found that DCAs are significantly and negatively associated with the initial return of new issues. We believe that DCAs have a positive impact not only on the offer price but also on the first closing price. Thus, we expect that this negative relationship between DCAs and initial return of IPOs will manifest itself much more on subsequent initial returns. Only two control variables, *Hot* and *Ln(Proceeds)*, are significant initial return determinants. The significant positive coefficient on the proxy for timing of IPO activity

[17] The highest VIF is equal to 2.468, 1.556 and 1.503 for independent variables of regression 1, 2 and 3, respectively.

[18] The Durbin-Watson statistics values are estimated at 1.936 and 1.841 for regression 1 and 2, respectively, which are close to 2.00 (and substantially higher than 1.00), showing no evidence of autocorrelation in each regression. Additionally no heteroskedasticity is observed in regression 1 and 2.

Table 4. Results of the different regressions.

Variable	Regression (1)			Regression (2)			Regression (3)		
	Expected sign	Coeff.	t-stat	Expected sign	Coeff.	t-stat	Expected sign	Coeff.	Wald
Constant	/	0.041	0.463	/	-0.811	-2.400**	/	-1.328	0.207
DCA	-	-0.066	-1.523	-	-0.309	-1.983**	+	3.483	6.897***
VC	+/-	-0.018	-0.524	+	0.277	2.379**	-	-0.387	0.180
Retown	+/-	-0.032	-0.376	+/-	0.137	0.451	+/-	1.297	0.219
Ln(1+Age)	-	0.016	0.797	+	0.043	0.622	-	-1.382	6.286**
Hot	+	0.091	2.578**	-	0.154	1.267	+	0.041	0.003
Ln(Proceeds)	-	-0.024	-2.057**						
Audit	-	0.018	0.578						
Mixed	+	0.032	1.109						
Market	-	-0.036	-0.896						
LnMCap				+	0.098	2.662***	-	-0.891	5.615**
Lev				-	-0.175	-0.678	+	6.898	8.339***
Prof				+	0.901	2.260**	-	-1.287	0.313
Ex-ante				-	-0.119	-1.670*			
Hot bubble							+	7.656	17.206***
N		105			105			139	
Adj R^2		13.70%			22%				
F		2.828***			4.259***				
Nagelkerke R^2								75.90%	
X^2								26.385***	

This table reports an OLS regression (1) with the level of initial return as the dependent variable, an OLS regression (2) with the level of the long-run stock market performance of French IPOs as the dependent variable and a logistic regression (3) with the likelihood of involuntary delisting from the French Market as the dependent dichotomous variable. *N* = is the number of IPO companies*; DCA* = IPO year discretionary current accruals as a percentage of lagged total assets; *VC* = dummy variable equal to 1 for an issue backed by venture capitalists, and 0 otherwise; *Retown* = the proportion of shares retained by insiders after the IPO; *Ln(1+Age)* = the natural logarithm of one plus company age in years; *Hot* = dummy variable 1 is used as proxy for IPO issued during hot IPO period, and 0 is used for cold IPOs; *Hot bubble* = dummy variable 1 is used as proxy for IPO issued during the Internet bubble period (1999-2000), and 0 otherwise; *Ln(Proceeds)* = the natural logarithm of proceeds calculated as the offer price times the number of shares offered; *Audit* = dummy variable equal to 1 if the IPO firm has a Big4 auditor, and 0 otherwise; *Mixed* = dummy variable equal to 1 if both the company and some existing shareholders offer shares to the public in the same offering, and 0 otherwise; *Market* = dummy variable equal to 1 if the IPO is introduced on a regulated market, 0 otherwise; *LnMCap* = the natural logarithm of market capitalization calculated as the closing price multiplied by the number of shares outstanding on the first day of the IPO; *Lev* = total borrowings over total assets in the IPO year; *Prof* = net income divided by total assets in the IPO year; *Ex-ante* = Ex-post standard deviation of the market price for initial twenty trading days (inclusive of listing day) have been used as proxy for ex-ante uncertainty for the after-market performance of IPOs. *, **, *** denote significantly different from zero at the 0.10, 0.05 and 0.01 levels, respectively.

implies that IPOs issued during the period when IPO activity is more, experience higher initial return, consistent with prior IPO research (Lowry and Schwert, 2002; Engelen and Essen, 2010). The significant negative coefficient on *Ln(Proceeds)* suggests less uncertainty about the value of an IPO for a company making large issues, thereby reducing the level of underpricing. Indeed, issue size has been used as a proxy for ex-ante uncertainty in other studies as well (Beatty and Ritter, 1986; Amihud et al., 2002; Kiymaz, 2000; Ljungqvist, 1997; Samarakoon, 2010) and it was found to be negatively associated with IPO underpricing. Meanwhile, venture capital (*VC*), retained share owner-ship (*Retown*), company age (*Ln(1+Age)),* audit quality (*Audit*), the nature of IPO (*Mixed*) and market listing (*Market*) have no significant impact on initial return. However, Gompers (1996) and Lee and Wahal (2004) show that IPOs backed by VCs have significantly higher underpricing compared to matched IPOs not backed by VC. In fact, according to 'grandstanding hypothesis', we believe that VC have no significant impact on initial return because the majority of venture capital firms in our sample are no younger and have previously conducted many IPOs and have less need to more reputation.

Table 4 also presents results of OLS regression (2). Empirical results indicate that the taken variables *DCA, VC, Retown, Ln(1+Age), Hot, LnMCap, Lev, Prof,* and *Ex-ante* collectively explain the three-year post-IPO

abnormal return *BHAR* by 22.00% (Adj R^2=0.220). According to the hypothesis 3, Table 4 shows a negative and significant influence of DCAs on long-term performance. The coefficient of this variable is negative (-0.309) and significant at the 0.05 level. Thus, French IPO companies in which managers engage in aggressive earnings management experience poor long-run stock return performance, consistent with prior IPO research in other countries (DuCharme et al., 2001; Roosenboom et al., 2003; Pastor-Llorca and Poveda-Fuentes, 2006; Teoh et al., 1998a, 1998b; Ahmad-Zaluki et al., 2011).

Four control variables, *VC, LnMCap, Prof,* and *Ex-ante* are also significant in explaining post-IPO abnormal return *BHAR*. Table 4 shows a significant and positive influence of venture capital (*VC*) on the long-run stock market performance of IPO companies. The coefficient of this variable is positive (0.277) and significant at the 0.05 level. Therefore, the presence of venture capital in the ownership of firms going public has been associated with improved long-term performance as they are better monitors of the firm (Brav and Gompers, 1997; Jain and Kini, 2000). Consistent with literature (Keloharju, 1993; Goergen et al., 2007), we document statistically significant (at the 0.01 level) and positive relationship between the IPO size (*LnMCap*) and the three-year post-IPO abnormal return *BHAR*, suggesting that larger the IPO company size the lesser is the long-run underperformance. Regarding the variable profitability (*Prof*), the coefficient estimate of 0.901 is positive and is significant at the 0.05 level indicating that more profitable companies in the IPO year, are more performing in the long-run (Fama and French, 2004; Li et al., 2006). Table 4 indicates that ex-ante uncertainty (*Ex-ante*) has a negative and significant (at the 0.10 level) influence on long-run performance. The results suggest that the IPOs surrounded with more risk at the time of issue underperform more in the long-run than the IPOs with less risk. Meanwhile, timing of high IPO activity (*Hot*), retained share ownership (*Retown*), leverage (*Lev*) and company age (*Ln(1+Age))* have no significant impact on the three-year post-IPO abnormal return *BHAR*.

Table 4 also presents the results of logistic failure regression (3) used to test our fourth hypothesis (H4). From this table, we can conclude that the model tested is generally significant. Indeed, the Chi-square test has a value of 26.385 and is significant (p = 0.000). The Nagelkerke R^2 indicates that 75.90% of the probability of belonging to the group that involuntary delisted from the French Market, is explained by the nine following variables: discretionary courant accruals (*DCA*), venture capital (*VC*), retained share ownership (*Retown*), company age (*Ln(1+Age)),* timing of high IPO activity (*Hot*), company size (*LnMCap*), leverage (*Lev*), profitability (*Prof*) and the Internet bubble period (*Hot bubble*). As expected, higher levels of earnings management are associated with a significantly higher likelihood of failure during or before their 5th year subsequent to IPO, as captured by the positive (3.483) and significant (at the 0.01 level, p = 0.009) coefficient on DCA in Table 4. Thus, consistent with our fourth hypo-thesis H4 and Li et al. (2006), French IPO companies in which managers engage in aggressive earnings manage-ment are more likely to be involuntarily delisted from the stock exchanges.

Four control variables, *Ln(1+Age), LnMCap, Lev,* and *Hot bubble* are also significant in explaining the involuntary delisting risk. The finding of significant negative coefficients for company age (*Ln(1+Age))* and size (*LnMCap)* is consistent with the intuition that younger, smaller and less established companies are more likely to fail. Leverage (*Lev*) is significantly positively associated with the likelihood of failure (at the 0.01 level), consistent with expectations and with the results from prior general failure studies (Demers and Joos, 2007; Li et al., 2006). Our proxy for "hotness" of the new issues market, *Hot*, is positively but not significantly associated with the likelihood of failure (p = 0.957). However, our proxy for the Internet bubble period, *Hot bubble*, is positively and significantly associated with the likelihood of failure (p = 0.000). This finding is consistent with the notion that period of high levels of demand for IPOs and precisely the internet bubble period (1999-2000), is followed by the issuance of firms of lower quality.

Inconsistent with our previous finding and the finding of Brav and Gompers (1997) who report that VC-backed firms have improved long-term performance, VC-backing does not guarantee the avoidance of an eventual failure of IPO firms in the long-run. Additionally, retained share ownership (*Retown*) and profitability (*Prof*) have no significant impact on the likelihood of failure during or before their 5th year subsequent to IPO.

Conclusion

In this paper, we examine the role of discretionary current accruals in the French IPO market. We find evidence of income-increasing earnings management in the first year as a public company and not in the year before the IPO. Indeed, most prior studies of earnings management in the context of IPOs (DuCharme et al., 2001; Roosenboom et al., 2003; Teoh et al., 1998a; Ahmad-Zaluki et al., 2011) suggest that companies opportunistically boost their earnings upward through income-increasing accruals in the IPO process and the quarters immediately after the IPO to increase in the offer price and in owners' wealth in the short-term. Empirically, the degree of underpricing is defined as the offer price less the closing price on the offer date, scaled by the offer price. Therefore, a negative relation between DCAs and IPO underpricing is expected. However, the empirical results presented are inconsistent with our prediction and with the results of Kim and Park (2005) and Kimbro (2005) who found that DCAs are significantly and negatively associated with the initial return of new issues. In fact, earnings management in French IPO companies is negatively but not

significantly associated with IPO initial return (under-pricing). May be the offer day closing price increases as much as the offer price, and this negative relationship between DCAs and initial return of IPOs will manifest itself much more on subsequent initial returns. It turns out that it is mostly the issue size and the timing of issue the significant initial return determinants in our sample.

Based on a sample of 139 French IPOs over the period 1999-2007, including 38 failures, we also document that companies associated with aggressive earnings management in the IPO process, tend to suffer from subsequently poor returns and to delist for performance failure after IPO. This adds French evidence to the prior findings that show a positive relationship between aggressive earnings management and under-performance over the three-year post-IPO period on the one hand (DuCharme et al., 2001; Roosenboom et al., 2003; Teoh et al., 1998a, 1998b; Ahmad-Zaluki et al., 2011) and between aggressive earnings management and involuntary delisting on the other hand (Li et al., 2006).

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