Were Insiders more Informed than the Market during IPO Bubble? Evidence from the Crossing of Legal Thresholds on the Nouveau Marché in France.*

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Abstract

This paper examines the effect of a change in the ownership of IPO's insiders on the value of firms during four years following the IPO. The changes in the ownership are deducted from the crossing of legal threshold. From a sample of 120 IPOs that took place during Internet bubble, 463 crossings of threshold were identified as events on the observation period. The market reaction to the announcement of these crossings has been studied and a buy-and-hold abnormal return has been calculated for 100 days to 500 days after the announcement. Similarly, a buy-and-hold abnormal return has been calculated for 100 days to 500 days after the IPO date according initial and subsequent sales by insiders. We find no evidence suggesting that insiders knowingly issue overvalued equity at IPO date. However, there is a weak evidence, but statistically significant, that suggests that insiders acquire private information during the first years of flotation and have the ability to take advantage of it by selling overvalued equity. The entrepreneurs seems to be the most informed on future value of the firm. However, the changes in the ownership of banks and venture capitalists are not followed by significant change of firm's long term value.

JEL classification: G32, G34.

Key words: Initial public offerings, Insiders, Entrepreneurs, Underpricing, Long-run performance, Legal thresholds.

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Introduction

Many theoretical studies have suspected managers to take advantage of their private information on the value of firm. All of these are based on the adverse selection theory. In their seminal paper, Leland and Pyle (1977) address the issue of an entrepreneur who is motivated to take his firm public in order to sell shares and diversify his portfolio. Meanwhile, he has the incentive to retain rather than issue underpriced shares. In the same vain, Myers and Majluf (1984) develop the basic idea that managers are reluctant to issue stock when they believe their shares are undervalued. All these studies suggest that insiders knowingly issue overvalued equity. In this paper, we attempt to test this assertion from a sample of 120 IPOs issued on the Nouveau Marché in France during the period 1998-2000.[1]

In the context of IPOs, some past and recent works attempted to assess the specific relation between the sale of secondary shares at IPO time and the value of firm (Booth and Chua (1996), Brennan and Franks (1997), BenDor (2003), and Chadha (2003)). The results are divergent and the link between the underperformance documented by several studies (Ritter (1991), and Loughran and Ritter (1995) among others) and the holdings of insiders[2] remains undetermined. Some others studies purpose to examine the influence of the post-IPO insiders' trading on the value of firm. For instance, Field and Hanka (2002) document that, on the three days after the expiration of the lockup period, share prices fall approximately 1.5 % while trading volumes increase of 40 %. However, these results cannot be entirely attributed to the sale of managers-owners. Espenlaub, Georgen, Khurshed and Renneboog (2003) obtain similar results by examining the price reaction at the end of lockup period of 87 English's IPO. Chadha (2003) empirically

[1] In their excellent survey, Ritter and Welch (2002) point out that "There is not [even] a published study of how post-IPO insider trading affects long-run performance." This paper attempts to cover the breach.

[2] In this paper, the words "insiders", "entrepreneur", and "manager(s)-owner(s)" are used as synonymies.

examine the actions of insiders over the entire public life of the IPO firm in order to understand whether they knowingly sell overvalued firm. He found no evidence that suggests that insiders knowingly issue overvalued equity.

This paper completes the previous studies in many extents. First, we examined the IPOs of new technology bubble. These IPOs experienced the most dramatic swing in their value during the first years of their flotation. In consequence, the question to understand whether insiders knowingly sell overvalued shares seems particularly relevant for this sample of firms. Second, we identified the insiders' trading by collecting all crossing of legal thresholds. The mandatory disclosure of the crossing mention the name of the person or entity who modified his/her participation. Thus, we could identify with accuracy the insiders trading post-IPOs. Third, we measured the market reaction to the change of insiders holding at different dates. Three dates were tested: the event date at which the trade occurred, the reception date at which the market authority received the notification of the crossing of threshold by the person or entity, and the announcement date at which the market authority disclosed the crossing of threshold to the public. Fourth, buy-and-hold abnormal returns were calculated for 100 to 500 days after each respective date in order to estimate whether insiders take advantage of their information to benefit from these transactions.

On the whole sample of threshold crossings, we observe a contrasted market reaction according to the side of crossing. A crossing-down results in negative abnormal returns around the event day whereas a crossing-up presents positive abnormal returns around the event day. We didn't discern information leakage between event date of threshold crossings and announcement date to the public. However, results are statistically significant only around the event date (not at the announcement date) as if the announcement of the threshold crossing doesn't convey any information. We observe that entrepreneurs are the *relative* most active traders in crossing-*down* of

threshold. In average, this crossing occurs 2 to 3 years after IPO date. The results emerging from the calculation of buy-and-hold abnormal returns suggest that entrepreneurs are able to take advantage of some private information on their firm's prospect acquired during the first years of flotation. The others shareholders don't seem to have the same ability. However, the study of characteristics and performance of firms calculated from IPO date shows that initial and subsequent sales of insiders are not good predictor of them. In others words, this result implies that insiders are not able to sell overvalued equity at IPO date. Finally, there is a net evidence that the propensity of firms to waste cash harms significantly its future performance. The interpretation of this finding is that managers-owners are incited to entrench in the firm for which there is no positive NPV investment and to waste cash until the busting of firm.

The remainder of the paper is organized as follows. In Section 1, we present a brief literature review and introduce the testable hypothesis. The data, sample and variables are described in Section 2. Empirical results concerning the event study for the crossing of thresholds are reported in Section 3. Firms characteristics and performance calculated from IPO date depending on the initial and future sales by insiders and depending on the propensity of firm to waste cash are also presented in this section. Section 4 concludes.

1 Literature review and testable hypothesis

In order to infer the information of insiders, we use two measures. The first measure consists in assessing the initial and the subsequent sales of insiders. Because there is no systematic mandatory declaration of insiders' transaction in France, the transactions occurring after IPO date were identified by the crossing of legal thresholds.

The second measure tries to estimate the use of proceeds for investment

or pay-off debt purposes. The goal is to evaluate the propensity of firm to waste the proceeds collecting from IPO.

The reasons why the information level of insiders could be inferred from these both measures are below developed.

1.1 Equity detention as a signal of firm's prospect

It is well known from the seminal paper of Leland and Pyle (1977) that the manager-owner can send a signal to the market about the value of the firm by retaining a high fraction of the firm. Following this intuition, several papers on IPOs have shown that underpricing acts as an additional signal to equity retention to convey information about future cash flows of the firm (see Grinblatt and Hwang (1989), Allen and Faulhaber (1989), and Welch (1989)).

The hypothesis emerging from these works is enounced as following:

H- 1 *The fraction of pre-IPO holdings sold by existing shareholders is negatively related to firm's prospect.*

Moreover, when they receive private information, insiders have incentives to hide it or to delay its announcement in order to take advantage of it. For instance, many papers have examined the trading activity of managers-owners at the end of lock-up period. Aggarwal, Krigman and Womack (2002) claim that managers strategically underprice IPOs to attract attention to the stock in order to sell their shares at the lockup expiration at prices higher than they would otherwise be able to obtain. Other studies have shown a significant underperformance around the expiry of lock-up. However, this underperformance doesn't seem tying to insider selling (Field and Hanka (2002), Espenlaub et al. (2003)). The basic idea remains that after the expiry of lock-up, a selling by insider would convey negative information on firm's prospect.

H- 2 *All insider sales after IPO date should be followed by a decrease of stock price on the short and the long run.*

1.2 Use of proceeds as a signal of firm's prospect

Usually, IPOs are carried out in order to raise fund for investment or debt pay-off purposes.[3] The raising of fund is mandatory condition to issue on the Nouveau Marché in France. Only high potentiel growth firms are accepted to issue on this market. Thus they are expected to fund an investment project.

However, when the net present value of project is negative and firm is not indebted, managers-owners have the incentive to waste the free cash flow raised from IPO instead of giving it back to shareholders as Jensen (1986) pointed out. It creates an agency problem generating costs and reducing firms performance.

The waste of this free cash flow proves that managers-owners hold private (negative) information about firm's prospect.

The use of proceeds seems to influence the value of firm. Leone, Rock and Willenborg (2003) show that the planned use of proceeds to pay off debt or to invest for long term is associated with less underpricing. This proves that the planned use of proceeds conveys a positive information to the market when these funds are expected to be used for investment or debt pay-off purposes. From a sample of French SEOs, Jeanneret (2005) provides the evidence that issuers who planed to finance new investments exhibit long-run underperformance. These issuers would be more inclined to be sensitive to adverse selection problems or agency conflicts implying under-reaction on the long-run. As the previous study, the author examines the intended use of proceeds but not the actual one.

In the present work, we argue that market can infer firm's prospect by

[3]For the motivation of IPOs, see, for instance, Pagano, Panetta and Zingales (1998).

observing the use of proceeds. It may indicate the confident of managers in firm's prospect. The wasting of cash-flow generated by IPO may signal the absence of profitable project, harming the firm's prospect.

H- 3 *The performance would be better for firms that spend the proceeds for investment or debt pay-off purposes than for those that waste this fund.*

2 Data, sample, and variable measures

2.1 Description of sample and data sources

The sample includes all stocks that went public on the French Nouveau Marché [4] between January 1, 1998 and December 31, 2000. 120 firms have been included. This observation period corresponds to a 'hot market' coinciding with the so-called Internet Bubble. We chose to test our hypothesis on this specific market for three reasons:

- These firms were the more subject to informational asymmetries during this period. So, the windows opportunity is particularly subject to apply. During such period, Ritter (1991) and Loughran and Ritter (1995) argue that issuers successfully time their offerings to lower the cost of capital.

- The raising of funds is a mandatory condition to issue on this market. Firms are expected to fund their growth by investing. This feature is particularly relevant to test our hypothesis 3. If proceeds of IPO are not used to invest or to re-balance capital structure, it could signal the absence of valuable investment project.

- Industries of firms listed on this market are quite similar. So, our result won't be driven by industry effect.

[4] The Nouveau Marché was specialized to the flotation of high-tech firms in France.

Because no systematic mandatory disclosure of insiders' trading exist in French Law, we attempt to identify the trades of insiders by examining the crossing of legal thresholds.[5] We hand collected 496 announcements of breach of legal thresholds from the declarations available from the *Autorité des Marchés Financiers* (AMF).[6] From each declaration, three dates have been collected:

- The event date: the effective date at which the crossing has occurred,
- the reception date: the date at which AMF received the notification from the implied shareholder,
- the announcement date: the date at which AMF publicly discloses the declaration.

Moreover, the crossed legal threshold, the identity of the shareholder who crossed it and his percentage of detention after the crossing were hand collected. We sorted the declarations to avoid several event for a same crossing of threshold. For instance, some crossing have been mentioned several times because they have implied a declaration from the selling shareholder and one from the buying shareholder, the trade of both of these shareholders having crossed a threshold. In this case, we retained the declaration resulting from the trade of insider. After excluding the doubloon, we have a sample of 463 crossings of threshold.

Stock daily prices were obtained from Euronext. Accounting and financial data have been extracted from Diane database.

[5] Zaabar (2003) analyzes the effect of a change in the ownership concentration level on the value of firms by examining the market reaction to the announcement of the crossing of various legal thresholds of capital. A brief review of the French Law relative to the mandatory disclosure of the crossing of thresholds is presented in Appendix.

[6] These documents are downloadable from http://www.amf-france.org.

2.2 Variable and sub-sample definitions

As previously discussed, in order to assess whether insiders (managers-owners) hold information at time of IPO and during the first few years of flotation, we examine the use of raised funds and the insider trading in conjunction to short and long run performance.

The raised funds at IPO can be used for investment, financing, or acquisition purposes. Another utilization can be viewed as a waste for paying managers' salaries, and maintaining (non profitable?) firm alive.

On the Nouveau marché in France, 50% of the proceeds must come from a new equity offering at IPO date. The reason of this rule is that only growing firms needing new financing are permitted to issue on this market.

There is no direct measure of the propensity of the new listed firm to waste the raised fund. In order to assess this propensity, we introduce an indicator, named *Propensity to Waste Cash* (PWC), as following:

PWC = ($\triangle$ fixed assets + $\triangle$ financial debts - $\triangle$ cash or assimilable) - new equity offering at IPO date

The variations $\triangle$ are calculated between the IPO date and two years after. It means that if the fund raised from IPO are not been used for investing or for decreasing debt during two years after the IPO, it is suspected to be wasted. Hence, when $PWC > 0$, the propensity of wasting IPO's funds is low. Conversely, when $PWC < 0$, the propensity of wasting IPO's funds is high. Lately, PWC will designate a dummy variable taking the value of one when the measure is negative and 0 otherwise.

We specify a dummy variable, named *Entrepreneur Holding Down* (EHD), measured for each firm, which takes the value one when the entrepreneur has reduced his holding at IPO date or at least once during three years after the IPO, and 0 otherwise.

Short and long run performances are measured from IPO date and from crossing threshold date. Initial return is calculated according to the usual

methodology. Buy-and-hold returns are calculated from 10 days after IPO date to 100, 250, and 500 days afterwards.

An event study is conducted to investigate the market's perceived impact of crossing threshold on shareholders' wealth. Abnormal returns have been measured on 5 days around the central date (the event window includes 11 days). We use the market-adjusted-return model for assessing the normal return. This model can be viewed as a restricted market model with α and β constrained to respectively be 0 and 1. The impossibility to calculate a beta on a sufficient long period for many firms in our sample prevents us to use the classical market model.[7] A parametric Student test and a non parametric Wilcoxon test are simultaneously calculated to measure the statistical significance of results. SBF250 index and the Nouveau Marché index are successively used in order to test the robustness of results. Further calculation details are indicated in the Appendix.

3 Empirical results

3.1 Univariate analysis of IPOs and crossings of threshold

Table 1 presents some descriptive statistics of our samples of IPO firms. We observe that fund raising and IPO pricing have increased from 1998 to 2000, corresponding to the so-called IPO-bubble. The sample includes exclusively high-tech firms. In some extents, some our statistics can be compared to those from Schultz and Zaman (2001). For their sample of internet IPO's firms, these authors have measured an underpricing of 80.66% in average (median: 50%). The underpricing calculated on our sample is much more lower. The mean and median of initial returns are respectively of 21.38% and 12.92%. This difference can be attributed to the composition of our sample which doesn't include exclusively internet firms. The proceeds are

[7] The small size of French financial market doesn't allow us to match the IPO firms of the sample with similar firms in same industry.

also lower (about three times less) because of the smallest size of firms listed on the Nouveau Marché. However, in our sample, the age of IPOs firms (6 to 8 years) and the debt ratio (0.09 to 0.17) are similar to those noted in recent IPOs studies (for instance, BenDor (2003)).

In Tables 2 and 3, the main characteristics of the thresholds' crossings are presented. From Table 2, we observe a high occurrence of the crossings up and down of the relative low thresholds 5% and 10%. The crossings of thresholds modifying control of the firm (33.33% and 50%) are the most seldom. An interesting pattern is revealed by Table 3: Although bank and venture capitalist are the most active traders in crossing up and down of threshold, the entrepreneurs are the *relative* most active traders in crossing *down* of threshold. Moreover, the crossing of threshold are detected, in average, between 2 and 3 years after IPO date. This period follows the end of lock-up usual period which last about 6 months after IPO date in France. Finally, among the 120 IPOs firms of our sample, sales of secondary shares occurred for 71 of them (59%) while they occurred in 23 of 35 firms (66%) which experimented subsequently a crossing down of threshold by its entrepreneur.

3.2 Results of the event study for the crossings of legal thresholds

3.2.1 Results from the whole sample

Three dates are used in order to examine whether the trader of firms were informed about firms' prospect: Event date, Reception date, Announcement date. All these three dates are identified in the notification disclosed by the Authorities at the announcement date. The Authorities receives the notification of the crossing from the trader at the reception date. In this notification, the trader mentions the level of his detention before and after the crossing of threshold, the operation at the origin of this event, the number

of shares implied and the event date at which the operation was made. So, at the event date, nobody is supposed to observe the action of the trader since markets are anonymous. The reaction of the market reflecting his belief about the meaning of this operation will be reflected in the price when the operation becomes common knowledge i.e. at the announcement date. In consequence, if the crossing of legal threshold acts as a signal of future prospect of the firms, the market reaction could be observed only at the announcement date.

The reception date is equally tested to eventually identify the existence of a leak of information concerning the crossing of thresholds.

From Table 4, we observe a significant positive abnormal return at event day (0) of the crossing-up threshold (mean and median are respectively of 0.85% and 1.09%). However, the market reaction for the crossing-down threshold is not significant. Except for the median of cumulative abnormal return of the crossings-up calculated on days 0-2 (1.39%), there is no more results with statistical significance in this table. For this table and the followings, all calculations have been replicated with a larger index: SBF250. Results (not reported) are perfectly consistent with those resulting from the use of the Nouveau Marché index in this table and the followings.

In Table 5, only the average abnormal return of day +1 for the crossing-up (+0.88%) is statistically significant according to Student-t. None of buy-and-hold abnormal return is significant according to both Wilcoxon and Student tests. These results suggest the absence of profitable leakage of crossings of legal thresholds between the event date and the announcement date.

Table 6 presents the short and long run abnormal return around the announcement date of crossings of thresholds. More surprisingly, the results in this table are weakly significant. Again, none of results is significant according to both w and t tests. This evidence can be interpreted as the

absence of clear information conveyed by the crossing of thresholds from market point of view.

Figures 1, 2 and 3 show the cumulative average abnormal return (CAR) on the 11 days of event period corresponding respectively to the Tables 4, 5 and 6. The difference between the CAR of crossing-down and the CAR of crossing-up clearly appears when the central date is event date. Firms for which a crossing-down occurs perform less around the event date than firms experimenting a crossing-up. This difference is not so evident when the central date is reception date or even announcement date.

As we previously pointed out, there is significant difference in the distribution of crossings according to the size of threshold. All results were replicated by sorting abnormal returns by thresholds' size and by trading size. Since, none interesting and significant pattern was detected, these results are not reported here. However, these results don't mean that trading size do not convey an information to the market at the three dates of the crossing of a threshold. The information on the trading size becomes public when the declaration of the crossing of threshold is made. We recall that this declaration is received by market Authorities at the reception date. This latter announces the crossing of threshold at the announcement date. So the impact of trading size on abnormal returns must be apparent only at this both dates (reception and announcement) but not at the event date at which the transaction is not a public information. Then we develop a specific test by calculating the Spearman rank coefficient between the absolute value of abnormal return, the crossed threshold, and the trading size. Table 7 reports the results of this test. As expected, we observe a positive relation between trading size and abnormal return at the reception and announcement dates. This result suggests that the market interprets the size of trade as an indicator of the importance of information conveyed by the insiders' trading. However, there is no apparent link between abnormal returns and

the crossed threshold.

Now, does the identity of the shareholder who cross the threshold modify these results?

3.2.2 Results from sub-sample according to the identity of shareholders

In Table 8, the abnormal returns around the event date of the crossing of threshold by entrepreneurs are calculated. The levels of significance are globally higher than those in the previous tables. The most interesting result in this Table seems to be the strong negative reaction the day -1 (mean: -1.62%, median: -1.29%) of the crossing of threshold. Moreover, we observe a significant negative buy-and-hold abnormal return calculated for 250 days after the crossing-down of threshold (median: -17.65%). We observe a similar patterns for the crossing-up of threshold with a positive long-run performance 500 days after this crossing-up (median: +62.83%). These results suggest that entrepreneurs would be able to take advantage of some private information, acquired during the first years of flotation, on their firm's prospect. This result is consistent with our hypothesis 2.

Interestingly, it doesn't seem to be the case of the other shareholders. For instance, in Table 9, although the market reaction is significantly positive at the crossing-up of threshold by banks and venture capitalists (mean and median = 1.27%), the long-run abnormal returns don't present strong significance. We observe an equivalent pattern in Table 10 concerning the crossing of threshold by others shareholders (like firms).

Figures 4, 5 and 6 illustrate the cumulative abnormal returns respectively depicted in Table 8, 9 and 10. Differences between crossing-down and crossing-up are particularly important when the crossings of legal threshold are initiated by entrepreneurs or banks and venture capitalists. The CAR of crossing-down are lower than those of crossing-up around the event date.

We note that the patterns of the graphics 4, and previously 1 suggest that the increase for the crossing-up trades and the decrease for the crossing-down trades seem to happen some days (and maybe some weeks) before the event date. The explanation could be that the shareholders' selling or buying activities begin few weeks before the crossing of a threshold. To test whether this activity presents significant returns, we calculated a buy-and-hold abnormal returns for different period *before* the event day (-20, -50, -100, -250 and -500 days). None of these abnormal returns is statistically significant whatever the methodology used and whatever the identity of traders.

Thus, among all shareholders who cross the legal thresholds during a period of 3 years after IPOs date, only entrepreneurs seem to be able to capture some gain of this transaction on the long-run. Table 11 reports tests of difference for short and long-run abnormal returns between entrepreneur and others shareholders. Several statistical significant differences appear: abnormal returns are significantly lower for the crossings-down initiated by entrepreneurs than for the ones by the others shareholders. The long-run performance is significantly lower for entrepreneurs than for the others shareholders 100 and 250 days after a crossing-down. It is significantly higher 500 days after a crossing-up. These results are consistent with the previous ones and suggest that entrepreneur could take advantage of their private information on future performance of the firm.

3.3 Firms characteristics and performance from IPO date according to insiders' behavior

In this subsection, we investigate whether IPO's firms present different characteristic and performance regarding the behavior of insiders. This behavior is supposed to reflect their private information. According to our previous discussion, two distinctive actions of insiders can be interpreted as an ex-

pression of their private information: the propensity to waste cash raised at IPO and their initial and subsequent trading on their securities. In section 2.2, the first action has been noted by PWC whereas the second one has been specified by EHD. When $PWC = 1$, the firm is suspected to waste its cash because of lack of positive NPV project. In this case, the incitation of managers-owners (or entrepreneurs) is to entrench in firm and continue to waste cash (by distributing salaries and bonus) until the busting of firm, instead of giving the cash back to shareholders. Similarly, $EHD = 1$ signals a decrease in holding of insiders. In this case, insiders are suspected to use their private information to sell over-valued equity. In both situations, insiders are supposed to take advantage of their private information.

To test this assertion, Table 12 presents firms' characteristics and performance according to the decrease of insiders' holdings, EHD. None difference is statically significant except for insider selling intensity (by construction). However, this absence of significance in conjunction to the previous results is meaningful: at IPO date, it doesn't seem that initial and subsequent sale are good predictor of characteristics or future performance of the firm measured from IPO date. This result invalidates the hypothesis 1. However, recall that previous results shown that, after IPO date, subsequent sale of entrepreneur could be a predictor of future performance measured from the date of this subsequent sale. The combination of both results suggests that insiders would acquire private information *after* IPO date and would become able to take advantage of it.

Table 13 reports the same variables according to the propensity to waste cash. Firms for which this propensity is high ($PWC = 1$), are significantly less indebted than the others firms and experiment negative performance: The 500 days buy-and-hold abnormal return is -13.71% (median) for firms with high propensity of wasting cash whereas it is of 6.18% for the others firms. The initial selling intensity of insiders is higher for the firms with high

propensity of wasting cash than for the others (slightly significant). Consistently with our hypothesis 3, these findings suggest that the propensity of wasting cash signals negative information on firm's prospect.

4 Conclusion

Initial public offerings carried out during 1998-2000 on the Nouveau Marché in France are known to have generated high initial returns and to have raised tremendous amount of money compared to the traditional firms newly listed at the same period. In this paper, we examine whether initial shareholders such as entrepreneurs were more informed than the market on the firms' prospect at IPO date and subsequently during the first years of listing.

In order to infer the information of insiders, we used two measures. The first measure consisted to assess the initial and the subsequent sales of insiders. Because there is no systematic mandatory declaration of insiders' transaction in France, the subsequent transactions were identified by the crossing of legal thresholds. The second measure attempted to estimate the propensity of firm to waste cash. This propensity reflects the information hold by insiders on the presence of positive NPV investment and so on the firm's prospect.

The main results suggest that entrepreneurs are able to take advantage of some private information, acquired during the first years of floatation, on their firm's prospect. The others shareholders don't seem to have the same ability. However, insiders would not be able to sell overvalued equity at IPO date although there is a net evidence that the propensity of firms to waste cash harms significantly its future performance. This later result can be interpreted by the incitation of managers-owners to entrench in the firm for which there is no positive NPV investment and to waste cash until the busting of firm.

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Appendix

The legal threshold in France

As the term is used in the provisions of Article L.233-7 of the French Commercial Code, any shareholder who should come to own a number of shares that would represent a percentage of ownership equal to at least the legal thresholds of 5%, 10%, 20%, 33.33%, 50% or 66.66% of the share capital or voting right of a company listed on the *Premier Marché*, *Second Marché* or *Nouveau Marché*, is obliged to inform the company of the number of shares he owns within fifteen days from the time one of these thresholds is crossed. He also must notify this crossing to the authorities AMF (Autorité des Marchés Financiers) within five active stock market days. Any shareholder whose equity holdings should drop below one of the aforementioned thresholds must also inform the company and the authorities within the same delay.

The methodology for calculating short and long run abnormal returns

To evaluate the short-run performance 10 days around the date of a crossing of threshold (labeled 0), we calculate average adjusted returns (AR) with daily portfolio rebalancing. The adjusted returns are computed using an appropriate index as benchmark (either the Nouveau Marché index or the

SBF250 index). The abnormal return to stock i in event day t is defined as

$$ar_{it} = r_{it} - r_{mt}$$

where r_{it} is the stock raw return on day t and r_{mt} the index raw return on the same day. The average abnormal return on a portfolio of n stocks for event day t is the equally-weighted arithmetic average of the abnormal returns:

$$AR_t = \frac{1}{n}\sum_{i=1}^{n} ar_{it}$$

Figures 1 to 6 represent the cumulative average returns from event day q to event day s as the summation of the average abnormal returns:

$$CAR_{q,s} = \sum_{t=q}^{s} AR_t$$

To evaluate the long-run performance from the IPO date or from the crossing of threshold, we calculate a buy-and-old abnormal return. We use the same benchmark as previously. The buy-and-old abnormal return from event day q to event day s is calculated as:

$$BHAR(s-q) = \prod_{q=1}^{s}(1 + r_{it}) - \prod_{q=1}^{s}(1 + r_{mt})$$

Figure 1: Cumulative average abnormal returns for 251 crossings-down and 212 crossings-up around the event date.

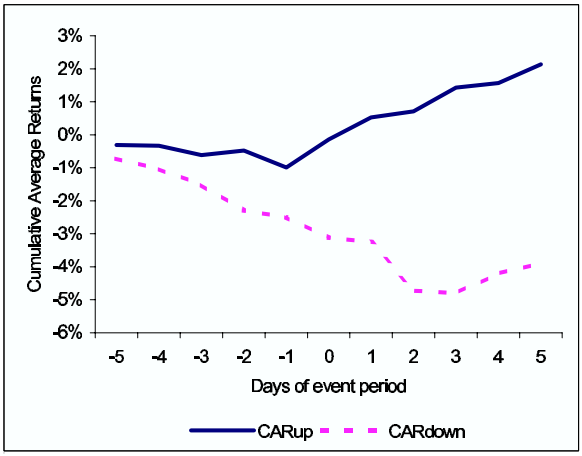

Figure 2: Cumulative average abnormal returns for 251 crossings-down and 212 crossings-up around the reception date.

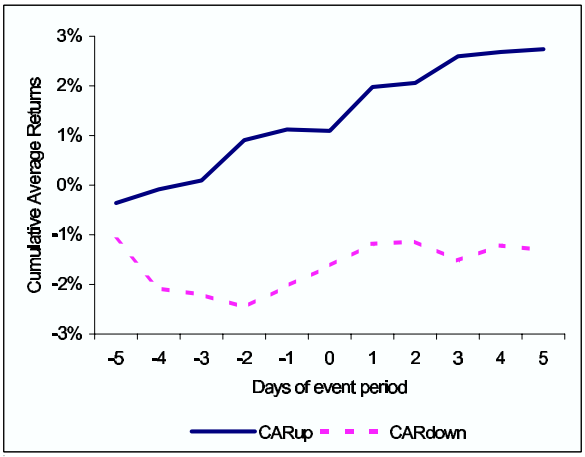

Figure 3: Cumulative average abnormal returns for 251 crossings-down and 212 crossings-up around the announcement date.

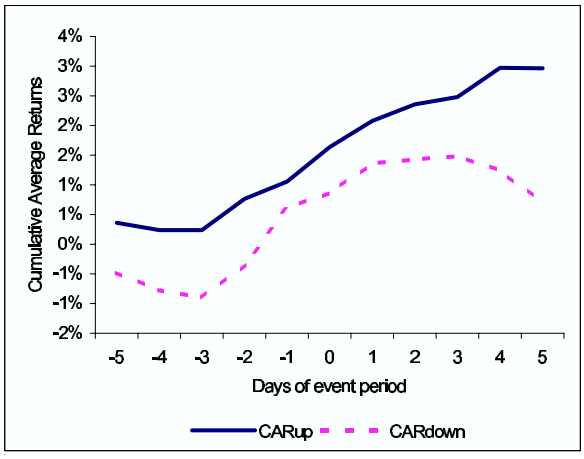

Figure 4: Cumulative average abnormal returns for 61 crossings-down and 14 crossings-up initiated by entrepreneurs around the event date.

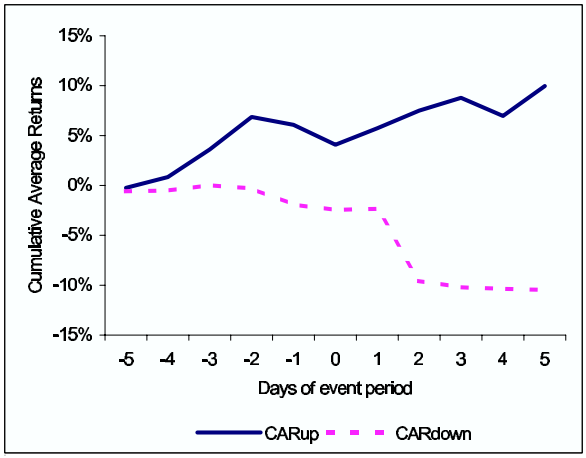

Figure 5: Cumulative average abnormal returns for 138 crossings-down and 135 crossings-up initiated by banks and venture capitalists around the event date.

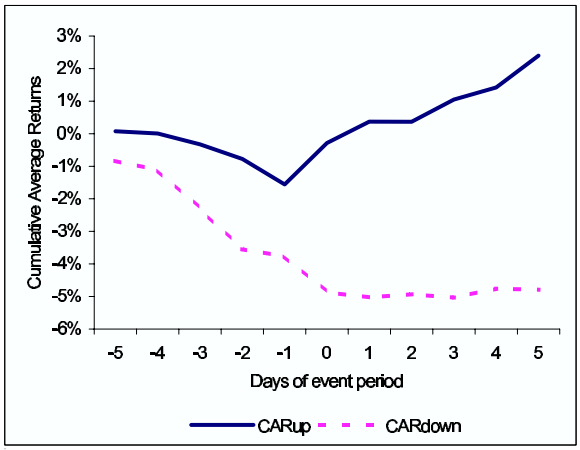

Figure 6: Cumulative average abnormal returns for 52 crossings-down and 63 crossings-up initiated by others shareholders around the event date.

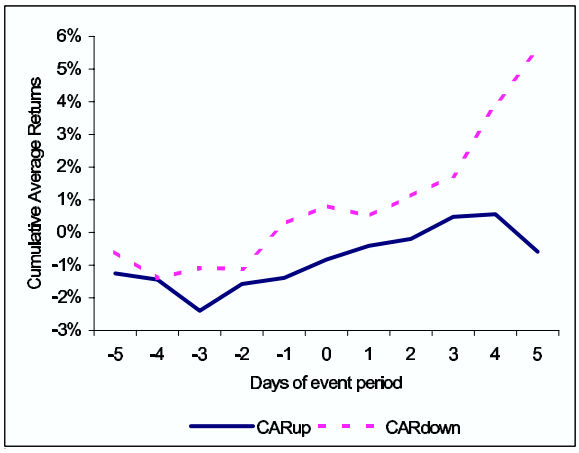

Table 1: Summary statistics for IPOs firms.
The sample includes all firms which carried out an IPO on the Nouveau Marché in France during 1998-2000. Transfers from market to market have been excluded. Euronext provided after market prices and accounting and financial data have been collected on Diane database. Initial return is the percentage change from the offering price to the aftermarket price. Debt ratio is financial debt to total fixed assets. Mean and median of these variables are presented.

IPO Years	Number of firms	Gross proceeds (m)	Initial return	Debt ratio at IPO date	Firm age (in years)
1998	41	14.13	17.99%	0.26	7.51
		8.74	9.61%	0.18	6.53
1999	31	18.64	20.75%	0.15	8.80
		11.14	7.69%	0.09	6.78
2000	48	32.90	24.69%	0.10	7.69
		22.37	2.92%	0.03	5.50
Total	120	22.80	21.38%	0.17	7.92
		12.92	5.27%	0.09	6.24

Table 2: Distribution of the crossings of thresholds.
The sample includes 463 crossings of thresholds resulting from shareholders trading of 120 IPOs firms which took place on the Nouveau Marché in France during 1998-2000. Frequencies and numbers of thresholds' crossing are indicated according to the size of thresholds.

Side	Size of threshold (number and per cent of total)						Total
	5%	10%	20%	33.33%	50%	66.66%	
Down	163 35.21%	56 12.10%	15 3.24%	6 1.30%	7 1.51%	4 0.86%	251 54.21%
Up	126 27.21%	44 9.50%	14 3.02%	1 0.22%	12 2.59%	15 3.24%	212 45.79%
Total	289 62.42%	100 21.60%	29 6.26%	7 1.51%	19 4.10%	19 4.10%	463 100%

Table 3: Characteristics of crossings of thresholds according to the identity of the trader.
The sample includes 463 crossings of legal thresholds resulting from shareholders trading of 120 IPOs firms which took place on the Nouveau Marché in France during 1998-2000. Frequencies and numbers of thresholds' crossing are indicated according to the identity of the trader. The former can be either the entrepreneur (funder of the firm), or a bank-venture capital, or else an other firm-shareholder. The mean of time separating the date of crossing of threshold from IPO date is indicated.

	Side	Number of trades	Time from IPO date (in years)	Number of firms
Trading from entrepreneurs	U	14	3.05	12
	D	61	2.33	36
Trading from bank and VC	U	135	2.56	55
	D	138	2.66	52
Trading from others	U	63	2.42	40
	D	52	2.03	32
Total	U	212	2.45	107
	D	251	2.55	120

Table 4: Market reaction around and after the event date of crossing of legal threshold.

The sample includes 463 crossings of legal thresholds resulting from shareholders trading of 120 IPOs firms during three years after IPO dates. IPOs took place on the Nouveau Marché in France during 1998-2000. Mean and median of abnormal return are indicated from 5 days prior to 5 days after the event day 0. Market adjusted model are used to assess the normal return. Market returns are estimated by the Nouveau Marché index. Two tests are computed to estimate the statistical significance: a parametric Student-t test, denoted t and a non parametric Wilcoxon tests, w. N designates the number of events. BHAR100, 250, and 500 represent the buy-and-hold abnormal return for respectively 100, 250 and 500 days. Figures statistically significant at the conventional level ($\leq$5%) are written in bold.

Day	Side of trades									
around	Up					Down				
event date	Mean	Median	N	t	w	Mean	Median	N	t	w
-5	-0.31%	-0.26%	194	-0.70		-0.73%	-0.43%	231	-1.71	
-4	-0.02%	-0.13%	195	-0.06		-0.31%	-0.30%	227	-0.83	
-3	-0.28%	0.01%	189	-0.65		-0.48%	-0.43%	224	-0.78	
-2	0.14%	0.06%	188	0.28		-0.78%	-0.40%	226	-1.65	
-1	-0.52%	-0.20%	196	-0.71	-0.56	-0.21%	-0.38%	229	-0.52	-1.36
0	**0.85**%	**1.09**%	196	**2.19**	**3.14**	-0.62%	0.12%	228	-0.95	0.67
1	0.67%	0.09%	193	1.66	0.62	-0.13%	-0.17%	224	-0.32	-0.70
2	0.18%	0.09%	191	0.50		-1.47%	-0.56%	223	-0.89	
3	0.72%	0.14%	192	1.84		-0.07%	-0.28%	219	-0.21	
4	0.14%	-0.23%	195	0.29		0.58%	-0.17%	225	1.56	
5	0.57%	0.33%	191	1.48		0.32%	-0.15%	218	0.78	
(0 1 2)	1.67%	1.39%	190	1.51	2.62	-0.46%	-0.91%	215	-0.28	-0.71
(-1 0)	0.31%	0.70%	194	0.26	1.01	-0.68%	-0.44%	225	-0.57	-0.56
BHAR100	-2.35%	-3.70%	174	-0.70	-1.13	1.85%	-7.16%	211	0.53	-1.91
BHAR250	-1.80%	-9.92%	148	-0.29	-1.35	6.31%	-7.87%	177	1.07	-0.86
BHAR500	1.11%	-7.75%	107	0.16	-0.44	13.97%	-7.77%	120	1.38	-0.60

Table 5: Market reaction around and after the reception date of crossing of legal threshold.

The sample includes 463 crossings of legal thresholds resulting from shareholders trading of 120 IPOs firms during three years after IPO dates. IPOs took place on the Nouveau Marché in France during 1998-2000. Mean and median of abnormal return are indicated from 5 days prior to 5 days after the event day 0. Market adjusted model are used to assess the normal return. Market returns are estimated by the Nouveau Marché index. Two tests are computed to estimate the statistical significance: a parametric Student-t test, denoted t and a non parametric Wilcoxon tests, w. N designates the number of events. BHAR100, 250, and 500 represent the buy-and-hold abnormal return for respectively 100, 250 and 500 days. Figures statistically significant at the conventional level ($\leq$5%) are written in bold.

	Side of trades									
Day around	Up					Down				
event date	Mean	Median	N	t	w	Mean	Median	N	t	w
-5	-0.36%	-0.18%	195	-0.53		-1.10%	-0.79%	228	-1.79	
-4	0.28%	0.36%	197	0.68		-0.99%	-0.71%	228	-2.07	
-3	0.18%	-0.26%	192	0.45		-0.12%	-0.52%	224	-0.37	
-2	0.81%	0.34%	192	2.23		-0.25%	-0.47%	226	-0.40	
-1	0.22%	-0.22%	193	0.55	-0.29	0.43%	0.04%	228	0.98	-0.28
0	-0.03%	0.18%	193	-0.07	-0.04	0.41%	-0.05%	226	1.06	0.53
1	0.88%	0.17%	192	1.99	1.39	0.44%	0.33%	226	1.19	0.73
2	0.08%	0.04%	195	0.23		0.05%	-0.37%	227	0.12	
3	0.53%	-0.35%	195	1.40		-0.38%	-0.33%	227	-1.06	
4	0.09%	-0.25%	195	0.24		0.30%	-0.24%	226	0.89	
5	0.06%	-0.03%	196	0.14		-0.09%	-0.41%	227	-0.22	
(0 1 2)	0.85%	0.00%	212	0.68	-1.36	0.81%	0.00%	251	0.83	-1.25
(-1 0)	0.17%	0.00%	212	0.26	-2.56	0.76%	0.00%	251	0.91	-2.14
BHAR100	0.47%	-3.10%	169	0.13	-0.83	2.54%	-5.67%	214	0.72	-1.16
BHAR250	-1.49%	-11.94%	144	-0.23	-1.34	9.33%	-6.73%	177	1.57	-0.26
BHAR500	12.02%	-7.27%	100	0.81	-0.71	16.57%	-7.11%	120	1.05	-0.36

Table 6: Market reaction around and after the announcement date of crossing of legal threshold.

The sample includes 463 crossings of legal thresholds resulting from shareholders trading of 120 IPOs firms during three years after IPO dates. IPOs took place on the Nouveau Marché in France during 1998-2000. Mean and median of abnormal return are indicated from 5 days prior to 5 days after the event day 0. Market adjusted model are used to assess the normal return. Market returns are estimated by the Nouveau Marché index. Two tests are computed to estimate the statistical significance: a parametric Student-t test, denoted t and a non parametric Wilcoxon tests, w. N designates the number of events. BHAR100, 250, and 500 represent the buy-and-hold abnormal return for respectively 100, 250 and 500 days. Figures statistically significant at the conventional level (<5%) are written in bold.

	Side of trades									
Day around	Up					Down				
event date	Mean	Median	N	t	w	Mean	Median	N	t	w
-5	0.36%	-0.30%	196	0.94		-0.48%	-0.87%	228	-1.17	
-4	-0.12%	0.09%	192	-0.30		-0.29%	-0.48%	226	-0.49	
-3	0.00%	-0.31%	193	0.00		-0.13%	-0.45%	226	-0.34	
-2	0.53%	0.16%	192	1.62		0.55%	-0.13%	226	1.43	
-1	0.29%	0.07%	193	0.70	-0.15	0.96%	0.21%	225	2.14	0.83
0	0.58%	0.01%	193	1.41	0.54	0.25%	0.20%	228	0.61	0.08
1	0.44%	0.21%	192	1.32	1.62	0.50%	-0.01%	222	1.23	0.43
2	0.28%	-0.16%	195	0.66		0.07%	-0.18%	227	0.17	
3	0.12%	-0.18%	196	0.31		0.05%	-0.27%	227	0.16	
4	0.49%	-0.29%	195	1.06		-0.24%	-0.55%	227	-0.64	
5	-0.01%	0.23%	196	-0.02		-0.54%	-0.50%	228	-1.74	
(0 1 2)	1.19%	0.00%	212	1.73	-0.78	0.73%	0.00%	251	1.09	-1.92
(-1 0)	0.79%	0.00%	212	0.93	-1.91	1.09%	0.00%	251	1.28	-1.40
BHAR100	1.12%	-2.81%	165	0.21	-0.68	1.01%	-5.74%	209	0.20	-1.70
BHAR250	3.62%	-10.27%	142	0.34	-1.03	8.38%	-6.07%	177	0.99	-0.67
BHAR500	12.01%	-7.62%	98	0.61	-0.66	15.16%	-7.83%	120	0.67	-0.63

Table 7: Spearman ranks' correlation coefficient between trading size and absolute value of abnormal return.

The sample includes 463 crossings of legal thresholds resulting from shareholders trading of 120 IPOs firms during three years after IPO dates. IPOs took place on the Nouveau Marché in France during 1998-2000. Abnormal returns are calculated by using the Market adjusted model with the Nouveau Marché index as benchmark. Trading Size is an estimator of the actual size of the trading made at event date. This estimator results to the absolute value of the following calculation: (Threshold crossed - shareholder's holding after the crossing) / Threshold crossed. Threshold corresponds to the actual threshold crossed (5%, 10%, 20%, 33.33%, 50%, 66.66%). E-1, E0, R-1, R0, P-1, and P0 designates the absolute value of abnormal returns at the day -1 and 0 of respectively event date, reception date and announcement date. Significant coefficients at the conventional level (¡5%) are written in bold.

	Threshold	Trading Size	E-1	E0	R-1	R0	P-1	P0
Threshold	1	-0.07	0.05	-0.02	0.01	0.07	0.05	-0.02
Trading Size	-0.07	1	0.03	0.07	0.08	**0.11**	**0.16**	0.03

Table 8: Market reaction around and after the event date of crossing of legal threshold by the entrepreneurs of firms.

The sub-sample includes 75 crossings of legal thresholds resulting from entrepreneurs' trading of 120 IPOs firms during three years after IPO dates. IPOs took place on the Nouveau Marché in France during 1998-2000. Mean and median of abnormal return are indicated from 5 days prior to 5 days after the event day 0. Market adjusted model are used to assess the normal return. Market returns are estimated by the Nouveau Marché index. Two tests are computed to estimate the statistical significance: a parametric Student-t test, denoted t and a non parametric Wilcoxon tests, w. N designates the number of events. BHAR100, 250, and 500 represent the buy-and-hold abnormal return for respectively 100, 250 and 500 days. Figures statistically significant at the conventional level ($\leq$5%) are written in bold.

	Side of trades									
Day around	Up					Down				
event date	Mean	Median	N	t	w	Mean	Median	N	t	w
-5	-0.24%	-0.24%	14	-0.14		-0.59%	-0.81%	55	-0.69	
-4	1.09%	0.17%	14	0.86		0.07%	0.21%	53	0.12	
-3	2.76%	0.26%	13	1.17		0.54%	-0.77%	52	0.53	
-2	3.25%	2.26%	13	1.04		-0.32%	0.00%	53	-0.43	
-1	-0.78%	0.48%	14	-0.33	-0.03	**-1.62**%	**-1.29**%	53	**-2.08**	**-2.60**
0	-1.99%	-1.03%	14	-1.47	-1.22	-0.53%	-0.46%	53	-0.77	-0.25
1	1.65%	0.85%	14	1.17	1.35	0.13%	0.12%	51	0.16	0.12
2	1.77%	1.42%	14	1.34		-7.24%	-0.48%	51	-1.03	
3	1.28%	-0.41%	13	0.72		-0.64%	-0.92%	49	-1.05	
4	-1.82%	-2.17%	14	-0.89		-0.15%	-0.15%	52	-0.22	
5	3.01%	1.72%	13	1.97		-0.12%	0.81%	50	-0.15	
(0 1 2)	1.42%	1.93%	14	0.39	0.91	-0.72%	0.21%	49	-0.26	0.07
(-1 0)	-2.77%	-0.06%	14	-0.62	-0.41	**-2.16**%	**-2.38**%	52	**-1.62**	**-2.58**
BHAR100	3.54%	-4.01%	13	0.39	-0.52	-10.70%	-18.07%	49	-1.49	-3.15
BHAR250	41.70%	8.77%	10	1.21	0.87	**-17.67**%	**-17.65**%	35	**-2.08**	**-1.90**
BHAR500	**71.29**%	**62.83**%	7	**2.52**	**1.86**	-4.05%	-4.50%	26	-0.55	-0.59

Table 9: Market reaction around and after the event date of crossing of legal threshold by the banks and venture capitalists.

The sub-sample includes 273 crossings of legal thresholds resulting from banks and venture capitalists' trading of 120 IPOs firms during three years after IPO dates. IPOs took place on the Nouveau Marché in France during 1998-2000. Mean and median of abnormal return are indicated from 5 days prior to 5 days after the event day 0. Market adjusted model are used to assess the normal return. Market returns are estimated by the Nouveau Marché index. Two tests are computed to estimate the statistical significance: a parametric Student-t test, denoted t and a non parametric Wilcoxon tests, w. N designates the number of events. BHAR100, 250, and 500 represent the buy-and-hold abnormal return for respectively 100, 250 and 500 days. Figures statistically significant at the conventional level ($\leq$5%) are written in bold.

	Side of trades									
Day around	Up					Down				
event date	Mean	Median	N	t	w	Mean	Median	N	t	w
-5	0.08%	-0.27%	127	0.16		-0.83%	-0.27%	127	-1.43	
-4	-0.07%	-0.16%	128	-0.17		-0.28%	-0.07%	127	-0.54	
-3	-0.33%	0.01%	127	-0.74		-1.19%	-0.44%	126	-1.24	
-2	-0.45%	-0.33%	126	-0.73		-1.24%	-0.58%	127	-1.77	
-1	-0.78%	-0.22%	129	-0.78	-0.58	-0.22%	-0.55%	128	-0.40	-1.03
0	**1.27**%	**1.27**%	130	**2.73**	**3.08**	-1.10%	0.29%	127	-1.01	0.43
1	0.66%	0.35%	129	1.35	0.86	-0.16%	-0.39%	126	-0.38	-0.81
2	0.00%	0.13%	128	-0.01		0.10%	-0.63%	126	0.19	
3	0.68%	0.34%	129	1.88		-0.11%	0.03%	124	-0.21	
4	0.37%	0.02%	130	0.72		0.28%	-0.17%	125	0.60	
5	0.98%	0.67%	129	2.45		-0.03%	-0.69%	120	-0.08	
(0 1 2)	1.94%	1.86%	138	1.43	2.67	-0.70%	-1.08%	140	-0.31	-0.63
(-1 0)	0.49%	1.03%	138	0.30	1.30	-1.07%	-0.32%	140	-0.55	-0.30
BHAR100	-2.30%	-4.17%	117	-0.59	-0.90	4.03%	-7.07%	119	0.87	-0.84
BHAR250	-0.73%	-10.19%	104	-0.10	-1.20	13.49%	-3.45%	101	1.84	0.24
BHAR500	-4.12%	-14.41%	75	-0.51	-1.11	28.34%	-6.61%	64	2.02	0.42

Table 10: Market reaction around and after the event date of crossing of legal threshold by the others firms.

The sub-sample includes 115 crossings of legal thresholds resulting from the trading of others shareholders than bank, venture capitalists or entrepreneurs. Trades occurred during a period of three years after IPO dates. 120 IPOs firms which took place on the Nouveau Marché in France during 1998-2000 composes the firms' sample. Mean and median of abnormal return are indicated from 5 days prior to 5 days after the event day 0. Market adjusted model are used to assess the normal return. Market returns are estimated by the Nouveau Marché index. Two tests are computed to estimate the statistical significance: a parametric Student-t test, denoted t and a non parametric Wilcoxon tests, w. N designates the number of events. BHAR100, 250, and 500 represent the buy-and-hold abnormal return for respectively 100, 250 and 500 days. Figures statistically significant at the conventional level ($\leq$5%) are written in bold.

	Side of trades									
Day around	Up					Down				
event date	Mean	Median	N	t	w	Mean	Median	N	t	w
-5	-1.25%	-0.22%	53	-1.15		-0.60%	-0.55%	49	-0.65	
-4	-0.19%	-0.22%	53	-0.34		-0.80%	-1.04%	47	-0.86	
-3	-0.95%	-0.35%	49	-0.92		0.31%	-0.13%	46	0.36	
-2	0.82%	0.61%	49	1.22		-0.02%	-0.22%	46	-0.02	
-1	0.19%	-0.21%	53	0.19	-0.23	1.37%	0.49%	48	1.61	2.03
0	0.56%	1.19%	52	0.71	1.89	0.55%	0.17%	48	0.63	0.97
1	0.42%	-1.12%	50	0.51	-0.67	-0.31%	-0.37%	47	-0.25	-0.37
2	0.22%	-0.26%	49	0.25		0.61%	-0.39%	46	0.48	
3	0.67%	-0.43%	50	0.61		0.62%	0.06%	46	1.01	
4	0.08%	-0.44%	51	0.07		2.19%	-0.12%	48	2.08	
5	-1.15%	-0.50%	49	-1.21		1.67%	0.72%	48	1.26	
(0 1 2)	1.01%	0.69%	64	0.45	0.52	0.51%	-1.35%	52	0.14	-0.65
(-1 0)	0.70%	0.54%	64	0.45	-0.08	1.92%	1.19%	52	1.12	1.77
BHAR100	-4.24%	-2.16%	44	-0.54	-0.53	10.11%	-2.22%	43	1.33	0.36
BHAR250	-17.85%	-13.30%	34	-1.47	-1.21	9.09%	-11.56%	41	0.57	-0.33
BHAR500	-2.86%	-3.41%	25	-0.19	-0.04	-1.09%	-14.38%	30	-0.04	-0.87

Table 11: Tests of difference in short and long-run abnormal returns between entrepreneur and others shareholders around and after the event date of crossings of thresholds.

The sample includes 75 crossings of legal thresholds resulting from the trading of entrepreneurs and 388 from the others shareholders such as bank, venture capitalists, and firms. Trades occurred during a period of three years after IPO dates. 120 IPOs firms which took place on the Nouveau Marché in France during 1998-2000 composes the firms' sample. Only median of abnormal return are indicated. The Wilcoxon test is indicated in parentheses. Market adjusted model are used to assess the normal return. Market returns are estimated by the Nouveau Marché index. The Mann-Whitney test, noted MW, is calculated to assess the statistical significance of the difference in abnormal returns between entrepreneurs and others shareholders. BHAR100, 250, and 500 represent the buy-and-hold abnormal return for respectively 100, 250 and 500 days. Figures statistically significant at the conventional level ($\leq$5%) are written in bold.

	Side of trades					
Day around	Up			Down		
event date	Entrepreneur	Others	MW	Entrepreneur	Others	MW
-1	0.48%	-0.21%	0.12	**-1.29**%	-0.20%	**-2.28**
	(-0.03)	(-0.60)		(-2.60)	(-0.09)	
0	-1.03%	**1.27**%	**-2.08**	-0.46%	0.22%	-0.72
	(-1.22)	(3.68)		(-0.25)	(0.92)	
(0 1 2)	1.93%	**1.24**%	-0.09	0.21%	-1.11%	0.42
	(0.91)	(2.51)		(0.07)	(-0.76)	
(-1 0)	-0.06%	0.70%	-0.35	**-2.38**%	0.37%	**-2.47**
	(-0.41)	(1.13)		(-2.58)	(0.72)	
BHAR100	-4.01%	-3.38%	0.22	**-18.07**%	-3.84%	**-2.29**
	(-0.52)	(-1.06)		(-3.15)	(-0.51)	
BHAR250	8.77%	-12.28%	1.47	**-17.65**%	-5.34%	**-1.79**
	(0.87)	(-1.65)		(-1.90)	(0.03)	
BHAR500	**62.83**%	-10.37%	**2.54**	-4.50%	-8.52%	-0.09
	(1.86)	(-1.07)		(-0.60)	(-0.10)	

Table 12: Tests of difference in characteristics and performance according to the insiders' selling

EHD takes the value of 1 if insiders have decreased their holding at IPO date or entrepreneur have crossed down a legal threshold during three years after IPO date, otherwise its value is 0. The sample includes 83 IPO firms for which $EHD = 1$ and 37 others IPO firms. The 120 IPO firms of the sample took place on the Nouveau Marché in France during 1998-2000. Mean and median of each variable are indicated. Initial return is the percentage change from the offering price to the aftermarket price. Debt ratio is financial debt to total fixed assets at the last fiscal year before the IPO. Initial selling intensity is defined as the number of secondary shares sold at the offer divided by the number of outstanding shares before the IPO. BHAR100, and BHAR500 represent the buy-and-hold abnormal return for respectively 100, and 500 days from 10 days after IPO date. Market returns are estimated by the Nouveau Marché index. The Mann-Whitney test, noted MW, is calculated to assess the statistical significance of the difference in each variable between firms with $EHD = 1$ and others firms. The value of test statistically significant at the conventional level ($\leq$5%) are written in bold.

Variables	IPO firms with $EHD = 1$	IPO firms with $EHD = 0$	MW test
Debt ratio	0.17	0.14	
	0.08	0.12	0.61
Firm age	8.00	6.46	
(in years)	6.61	4.61	-1.57
Gross proceeds	20.61	27.71	
(millions of euros)	12.20	16.13	0.84
Initial selling	9.30	0	
intensity (%)	7.67	0	**-5.83**
Initial	23.82	15.90	
return (%)	9.60	2.05	-0.57
BHAR100 (%)	10.40	11.89	
	3.94	-2.03	-1.01
BHAR500 (%)	35.84	1.41	
	-13.62	-7.95	0.48

Table 13: Tests of difference in characteristics and performance according to the propensity to waste cash.

PWC takes the value of 1 if firms didn't use the cash raised from IPO for investment or debt reimbursement during two years after IPO date, 0 otherwise. The sample includes 59 IPO firms for which $PWC = 1$ and 34 others IPO firms. The 120 IPO firms of the whole sample took place on the Nouveau Marché in France during 1998-2000. Mean and median of each variable are indicated. Initial return is the percentage change from the offering price to the aftermarket price. Debt ratio is financial debt to total fixed assets at the last fiscal year before the IPO. Initial selling intensity is defined as the number of secondary shares sold at the offer divided by the number of outstanding shares before the IPO. BHAR100, and BHAR500 represent the buy-and-hold abnormal return for respectively 100, and 500 days from 10 days after IPO date. Market returns are estimated by the Nouveau Marché index. The Mann-Whitney test, noted MW, is calculated to assess the statistical significance of the difference in each variable between firms with $PWC = 1$ and others firms. The value of test statistically significant at the conventional level ($\leq$5%) are written in bold.

Variables	IPO firms with $PWC = 1$	IPO firms with $PWC = 0$	MW test
Debt ratio	0.14	0.23	
	0.04	0.16	**2.01**
Firm age	7.42	8.08	
(in years)	5.72	8.28	0.83
Gross proceeds	21.27	15.44	
(millions of euros)	12.01	9.73	-0.83
Initial selling	7.54	6.53	
intensity (%)	5.53	4.19	**1.79**
Initial	21.73	15.24	
return (%)	3.85	6.97	0.35
BHAR100 (%)	13.94	13.50	
	9.67	1.46	-0.86
BHAR500 (%)	5.55	63.14	
	-13.71	6.18	**1.95**