Long run performance of IPOs and the role of financial analysts: some French evidence

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Abstract

This paper examines the long run performance of French IPOs carried out between 1991 and 2005. By using various methodologies, we find that IPOs in our sample performed negatively relative to comparison portfolios over the 1991-2005 horizon, unlike prior studies applied to French market. This abnormal long run performance is much severe for orphans' IPOs (without financial recommendation) than non orphans' IPOs from one to three-year horizon (statistically significant). The evidence suggests that analyst coverage is indeed important to issuing firm but the market do not fully incorporate the perceived value of this coverage. Further analysis reveals that this outperformance by non orphan stems from high coverage. Investors pay more attention for non orphan when IPOs are venture capital backed, with a big underwriting syndicate and low underpriced. Over the 1991-2005 period, analyst's affiliation does not appear to matter. This result is inconsistent with the conflict of interest hypothesis. We establish that analyst recommendations are significantly related to long run performance of IPOs. Then we corroborate the crucial role of financial analysts in producing and interpreting IPOs' financial releases.

Keywords: Initial Public Offerings, financial analyst, long run performance.

Introduction

The last decade of crisis has been turbulent for analysts' research. During the internet bubble period (1999 to 2000), the media and investors have pressured analysts to focus on the 'hot' industries. In every bull market there are excesses that become apparent by contrast with a following bear market. Therefore, in 2001 (the burst of the internet bubble), investors needed to blame somebody and analysts were fall guys. Both regulators and the financial press have pointed out that analysts' research was tainted by conflicts of interest, and academic literature has revealed that analysts were biased towards providing favorable reports to the detriment of their objectivity and reputation. From 1998 to 2001, an "all star" analyst issued 16 buy recommendations on Global crossing. The stock was 61$ in 1999 and had collapsed to around 1$ in 2001, the analyst finally revised his rating from buy to hold. Of the 10 firms he covered, 5 trade below 1$ a share, 3 have filed for bankruptcy.

On this report, Attorney General Eliot Spitzer pointed out performance of recommendations during institutional investor award dinner in 2002. "These are the institutional investor awards, and thus reflect criteria important to institutional investors, who prize analysts' accessibility, their insights and their ability to uncover a valuable piece of information about a company or sector, and their access to management.

What these awards do not measure is the performance of analysts' buy, sell and hold recommendation." "…The investing public is not aware that the awards don't reflect the performance of your stock recommendations."

In this study, we investigate the long run performance and the irrational investors' behaviour hypothesis by examining whether financial analyst recommendations allow alleviating this irrationality. Miller (1977) pointed out that, as the information is revealed to the market, investors downgrade their expectations and support the long run underperformance phenomenon. We expect that by reducing the information asymmetry, financial analyst recommendations help investors to define progressively the true value of the firm. We focus on the long run performance of French IPOs made between 1991 and 2005. To the best of our knowledge, it is the first study which investigates the link between the financial analyst recommendations and the performance of French IPOs over this recent period.

Some French studies find no abnormal long run performance (see Degeorge and Derrien, 2001). Our observation period is large and overlaps the so-called bubble period characterized

by a strong information asymmetry. We analyse long run performance from one year to five year following the IPO.

We measure the influence of financial analysts' recommendation on the long run performance of IPOs during a five-year horizon. Then, we are able to observe the adjustment of long run performance to recommendation disclosures.

Conversely to previous studies, we find significant long run underperformance of French IPOs from two to five-year horizon. This finding can be partly attributed to the inclusion of recent IPOs which underperform strongly. Significant differences appear between the long run performance of orphan (IPOs without analyst coverage) and non orphan (IPOs with analyst coverage). For instance, buy-and-hold abnormal returns for orphan are a significant -11,41% compared to an insignificant 4,29% for non orphan the first year following the IPO, a difference that is statistically significant. Further analysis reveals that this outperformance by non orphan stems from high coverage.

Finally, our results are robust after conditioning for venture capital backing, underwriting syndicate, underpricing, analyst affiliation, or operating performance variables.

The paper is organized as follows: we first analyze the existing literature in order to define our hypothesis. In a second section, we describe methodology, data and sample statistics. The third section presents findings. The last section concludes.

1 – Prior literature and hypothesis development:

1.1 – Is the analyst's coverage crucial to IPOs?

Analyst recommendations are valuable for several reasons. Analyst coverage can generate publicity for the IPO and increases firm value by generating more customers (Cliff and Denis, 2004). As Chen and Ritter (2000) and Aggarwal and al.(2002) argue, recommendations can boost share price that is very important for insiders wishing to sell their shares at the end of the lock-up period. Academic research points out the importance of analysts' coverage over the years. Krigman and al. (2001) suggest that the most important motivation for firms to switch underwriters between an IPO and seasoned equity offering is to obtain additional and influential analyst coverage. Loughran and Ritter (2004) and Cliff and Denis (2004) argue that underpricing of newly public firms is positively related to analyst coverage. According to Loughran and Ritter (2004), the average underpricing on IPOs was 7% in the 1980s and doubled to 15% during 1990-1998, before jumping to 65% during the internet bubble. Part of

this increase can be attributed to the analysts' coverage which has become very important over the years. Bradley and al. (2003) show that the number of managing underwriters in a syndicate is a very good indicator to predict which firms are likely to have coverage, but also which ones will have multiple coverage. Corwin and Schultz (2005) examine syndicates for 1638 IPOs and find evidence that each additional co managers results in 0,8 additional analyst issuing recommendations in the three months after the IPO.

While research coverage appears important for IPO firms, an examination of IPO firms' performance with and without analyst coverage may explain what value to attribute to the analyst coverage. Conflicts of interest have called into question whether analyst coverage is valuable. If affiliated analyst issues biased recommendations (according to previous literature), we cannot presume that the long run performance of orphan's IPOs (firms without analyst coverage) will be inferior to non orphan's IPOs (firms with analyst coverage) without controlling for the affiliation.

H1: Long run performance of non orphan's IPOs may be superior to orphan's IPOs.

1.2 - The role of financial analysts:

1.2.1 - Recommendations have investment value.

Analysts both provide new information and interpret previously released information. Most prior studies have concluded that the information they produce promotes market efficiency by helping investors to more accurately value companies. One possible source of this value is the ability of analysts to collect information useful in identifying undervalued or overvalued stock. An analyst's report includes the collection and evaluation of information related to a firm's future performance. The analyst obtains information from various sources including: conference calls and other management communications, general assembly and financial meeting, reports describing macro-economic conditions. From this information the analyst produces earnings forecasts, target price and stock recommendations. Investors use these outputs to make trading decisions. Jegadeesh and Kim (2006) examine analyst recommendations in the G7 countries and evaluate the value of these recommendations over the 1993 to 2002 period. The authors find that the frequencies of sell and strong sell recommendations (15.3%) in all countries are far less than that of buy and strong buy recommendations (46.9%). Asquith and al.(2005) document, using a sample of 1126 analyst reports, that analysts rarely issue sell or strong sell recommendations. The authors show that only 0.5% of the recommendations fall into these two categories. In contrast, 30.8% of the

recommendations are classified as strong buy, 40% as buy, and 28.7% as hold. A reason for the lack of negative recommendations is that an analyst's salary and bonus are linked to his firm's underwriting fees or commissions generated by his recommendations. Furthermore, analysts rely on company management for information and thus have a reason to maintain good relation with them. Barber and al. (2001) examine whether investors can profit from the analyst recommendations and these recommendations remain valuable.

Numerous studies distinguish four types of recommendations: initiation, reiteration, upgrade and downgrade. Initiation is defined as the first report an analyst produces about the firm. Bradley and al. (2008) show that initiations of coverage occur immediately after the end of the quiet period. Reiteration is defined as a restatement of a previously issued recommendation. Upgrades and downgrades are issued when analysts change their position on a stock that they are covering. The authors find that initiations on average elicit positive responses and that there is a large positive (negative) market reaction associated with upgrades (downgrades). According to Bagchee (2003), the strong response to both positive and negative revisions is not very surprising in the case of IPO considering their newness and the lack of public information about them. This study shows that downgrades are more likely to occur than upgrades. Irvine (2003) compares the return surrounding an analyst's initiation of coverage to the return surrounding a recommendation by an analyst who already covers the stock (so-called continuation). Using a sample of 2128 analyst's recommendations over the period 1995, he finds that the market responds more positively to analyst's initiations than to other recommendations. The market interprets analyst initiation as a positive signal. According to Bradley and al. (2003), analysts almost always initiate coverage with a buy or strong buy recommendation. This is consistent with Sayrak and Dhiensiri (2004) who find positive abnormal returns at the time of the initiations.

It appears that analyst recommendations add value for investors. Stock recommendations are costly for the analysts to provide. These costs include costs of investigation but also any reputation costs associated with incorrect recommendations**.** Finally, according to Houston and al. (2006) and Brav and Lehavy (2003) the market believes that there is some information in analyst recommendations and that the market places some credence in their recommendations. If recommendations have investment value, so we hypothesize:

H2: Market reaction may be associated to the nature of recommendations.

1.2.2 - The characteristics of financial analysts:

Analysts have not the same access to information. Affiliated analysts (analyst whose employer is a managing underwriter at the IPO) have superior access to information. As Jegadeesh and al. (2004) note analysts recommend firms with past strong performances and firms waited to have good expectations.

It is widely noted that analysts face conflicts of interest[1]. Prior studies have documented two alternatives hypothesis (Michaely and Womack, 1999, Lin and Mc Nichols, 1998).Under the conflict of interest hypothesis analysts may have to give positive recommendations to compete for future investment banking business, to generate trading commissions (Hayes, 1998, Irvine, 2004) or to maintain management relations and their access to the information (Francis and Philbrick, 1993, Das and al., 1998)[2]. Under the non-strategic hypothesis, issuers choose underwriters who are optimistic about their prospects. Michaely and Womack (1999) find, using a sample of 391 IPO in the USA over the period 1990 and 1991, that affiliated analyst recommendations perform more poorly than recommendations by unaffiliated analysts (consistent with Iskoz, 2003, Houston and al., 2006). Affiliated analysts issue recommendations that are overly optimistic (positively biased) and these analysts may be compelled to issue more positive recommendations on firms that have traded poorly in IPO aftermarket (consistent with James and Karceski, 2006). According to Chen (2004), even though the market reaction to favorable recommendations is less positive for affiliated analysts, long run return analyses suggest that analysts' affiliation is not significantly associated with long run abnormal returns after recommendations.

Michaely and Womack (1999) suggest some explanations to understand affiliation bias. The first one is that affiliated analyst believes that the firms he covers are better than the firms covered by other financial analysts. He would be not objective and able to accept that the firm he recommends does not show exceptional profits. This first explanation reveals an anchor bias (or overoptimism bias).

The second one is that analyst is partly chosen because of the favorable views he has about the firm. This reveals a selection bias, strategic choice assuring the firm to have favorable recommendations. Dechow and al. (2000) examine long-term earnings growth forecasts for seasoned equity offerings and establish a direct link between overoptimism of growth forecasts and the post-offering underperformance. Rajan and Servaes (1997) find that in the long run, IPOs have better stock performance when analysts ascribe low growth potential rather than high growth potential. However, the authors do not explain underperformance as the consequence of an overoptimism of growth forecasts.

As in Bradley and al. (2008), we focus on the market's reaction to a recommendation made by an affiliated analyst or not. Affiliated recommendations may be associated with a more positive announcement effect than unaffiliated recommendations if the market views these analysts as having sufficiently superior information or expertise to more than offset any conflicts of interest.

H3a: Market reaction to affiliated recommendation may be associated with a more positive announcement effect than unaffiliated recommendations.

Affiliated recommendations may be associated with a less positive announcement effect than unaffiliated recommendations if the market views these analysts as having a greater conflict of interest that is not offset by superior information.

H3b: Market reaction to affiliated recommendation may be associated with a less positive announcement effect than unaffiliated recommendations.

Lastly, there may be no difference in announcement effects because the market is naïve about the differential conflicts of interest.

H3c: Market reaction may be no difference in announcement effects between affiliated and unaffiliated recommendations.

1.3 - Long run performance of IPOs: some international evidence:

Many studies have documented an abnormal long run underperformance three to five years after IPOs' issues. For instance, Ritter (1991) compares over a three-year horizon, the performance of 1526 U.S. IPOs between 1975 and 1984 to firms already listed with the same characteristics (market capitalisation and industry). It appears that long run performance after the offering is 34.47% relative to 61.86% for a group of matching firms. Ritter emphasizes that underperformance is concentrated on younger companies and during hot market period. Loughran and Ritter (1995) study the performance over a five-year horizon using a sample of 4750 U.S. IPOs in the 1970-1990 period. On average, the annual return over 5 years is 5%. The authors find that investing an equal amount at the same time in a nonissuing firm with approximately the same market capitalisation returns an average compound of 12%.

This underperformance is mainly explained by irrational investors' behaviour when they invest in a context of strong uncertainty. Theo, Welch and Wong (1998) find that earnings manipulation by managers at the time of the IPO may be an argument of investors' overoptimism. Likewise, this anomaly can find an explanation in the role of underwriters who

underprice IPOs. The strong fluctuations of shares on the first days put the firm under the spotlight and attract investors. This makes a short movement of enthusiasm once fad dropped.
The underperformance of IPOs is not a singular phenomenon of U.S. market. Levis (1993) focus on IPOs made in the U.K. market over the 1980-1988 period. The author finds an underperformance between -8% and -23% relative to benchmarks used. Kooli and Suret (2004) study the long run performance of newly public firms on Canadian market. Their study reveals a five years long run underperformance of –24.66% for a sample of 445 IPOs between 1991 and 1998. Aggarwal, Leal and Hernandez (1993), report an underperformance of -47%, -19.6%, and –23.7% for IPOs in Brazil, Mexico and Chile respectively.
The findings of long run underperformance are controversial. Brav and Gompers (1997) argue that underperformance of IPOs disappear once book-to-market and size effects are taken into account. Over a sample of 3661 U.S. IPOs between 1935 and 1972, Gompers and Lerner (2003) find underperformance when they use methodology of buy-and-hold abnormal return, the authors note underperformance disappear when they use methodology of cumulative abnormal return. In other words, the long run performance of IPOs depends on the method employed.

2 - Methodologies, data and sample statistics:

2.1 - Methodologies:

The results of long term performance studies are very sensitive to methodological choices. We present our results using two frequently used and recommended methodologies (Brav and Gompers (1997), Barber and Lyon (1997)).
Firstly, we use the calendar-time approach as in Fama and French (1996). Their three-factor model says that the expected return on a portfolio in excess of the risk-free rate $[(ER_i) - R_f]$ is explained by the sensitivity of its return to three factors: (i) the excess return on a broad market portfolio $(R_M - R_f)$; (ii) the difference between the return on a portfolio of small stocks and the return on a portfolio of big stocks (SMB, small minus big); and (iii) the difference between the return on a portfolio of high-book-to-market stocks and the return on a portfolio of low-book-to-market stocks (HML, high minus low). Specifically, the expected excess return on portfolio i is,

$$E(R_i) - R_f = \alpha_i + \beta_i[\mathrm{E}(\mathrm{R_M}) - \mathrm{R_f}] + s_i\mathrm{E}(\mathrm{SMB}) + h_i\mathrm{E}(\mathrm{HML}) + \varepsilon_i,$$

where $E(R_i)$ is the monthly return on the IPO portfolio, R_f is the one-month Treasury bill rate, $E(R_M)$ is the monthly return on a value-weight market portfolio of Euronext stocks, E(SMB) is the difference between the returns on portfolios of small and big stocks (below or above the Euronext median), and E(HML) is the difference between the returns on portfolios of high- and low-book to market stocks (above and below the 0.7 and 0.3 fractiles of book-to-market ratios).

Secondly, we perform an event-time approach as in Brav and Gompers (1997). Fama and French (1992, 1993) have shown that size and book-to-market are important determinants of the cross section of stock returns. We compare performance of IPOs to size and book-to-market portfolios. Starting in January 1991, we use all Euronext stocks to create size quartile breakpoints with an equal number of firms in each size quartile. Size is measured as the number of shares outstanding times the stock price at the end of the preceding month. Monthly book-to-market data are extracted from Amadeus database for eazch firm. Within each size quartile we form four book-to-market portfolios with an equal number of firms in each boo-to-market quartile to form 16 size and book-to-market portfolios. Value weighted returns are calculated for each portfolios. In order to avoid comparing IPO firms to themselves, we eliminate IPO firms from the various portfolios for five years after their equity issue. Each issue is matched to its corresponding benchmark portfolio.

Long term performance is calculated using Buy-and-Hold Abnormal Return (BHAR).

The return on a buy-and-hold investment in the sample firm less the return on a buy-and-hold investment in a portfolio with an appropriate expected return (BHAR) is

$$BHAR_{it} = \prod_{t=1}^{\tau}[1 + R_{it}] - \prod_{t=1}^{\tau}[1 + E(R_{it})]$$

where R_{it} is defined as the month t simple return on a sample firm, $E(R_{it})$ as the month t expected return for the sample firm, i.e. the return of firm i's benchmark over the same period.

2.2 - Data and sample statistics:

Three types of variables are used in this study.

• Ex-ante IPO-specific variables (venture capital, shares offered, underwriters...) were found in SDC Platinum database. Our sample contains 270 IPOs that were conducted in France over the 1991-2005 period. We include all IPOs, with the exception of transfers from one market to

another and IPO which conducts a SEO within 5 years of the IPO date is also excluded. None of IPO delisted occurs within five years of issuance.

• Ex-post IPO variables, we focus on recommendations made by financial analysts. These recommendations come from the analyst-by-analyst I/B/E/S historical earnings estimate database. I/B/E/S provides us 6,733 recommendations made during the five years following IPO between 1991 and 2005.

• Long run performance variables. The long run performance is calculated using the Datastream monthly stock price database.

Table 1 shows descriptive statistics of orphan versus non orphan IPOs. There are 98 IPOs classified as orphan and 172 IPOs classified as non orphan. The average orphan raises €174.1 million in its IPO compared to €215 million for the average non orphan. This difference is statistically significant at 5% level using non parametric test. Consistent with prior research, analyst coverage is increasing in firm size. Characteristics of age are not statistically significant between non orphan and orphan and long term debt for non orphan is higher than orphan IPOs (significant at 10% level using *w* test). We find no difference in venture capital backing for orphans and non orphans. Orphans are associated with less underwriting syndicate with a mean of 1.96 managing underwriters compared to 3.14 for non orphan. According to previous studies, a large underwriting syndicate attracts analyst coverage (statistically significant at 1% level). There is no relationship between analyst coverage and underpricing. For instance, orphans have initial returns of 5.75% compared to 11.14% for non orphans. Non orphans are more underpriced than orphans but the difference is not statistically significant. Finally, Panel B shows that orphans or non orphans are not concentrate in particular industry or period. Orphans are less likely to have a high tech orientation compared to non orphans. 20% of non orphan IPOs are high-tech compared to 10% of orphan IPOs (not statistically significant). The number of non orphan IPOs has decreased over the 2001-2005 period. This reflects that French IPOs suffer of a lack of analysts' coverage. Among the 18 IPOs carried out in 2003, none of them has been covered by financial analysts. Only 2 were covered among the 35 firms that went public in 2004.

Table 1: Descriptive statistics

This table provides characteristics of orphans versus non orphans. An orphan (non orphan) means IPO without analyst coverage (with analyst coverage). IPO is number of issuing firm. AGE is the age of the issuing firm at the time of the offer in year. LONG TERM DEBT represents all interest bearing financial obligations, excluding amounts due within one year at the offering date in million. SIZE is the market capitalization at the offering date in million. VC AFFILIATION is the percentage of firms that are affiliated to venture capitalists. UNDERWRITING SYNDICATE is the number of managing underwriters (lead plus co-managers). UNDERPRICING is the percentage difference between the close on the first day of trading and the offer price. Medians are in parentheses. Student parametric (t) test and Wilcoxon (w) non parametric test are presented to estimate whether the difference between sample distribution is statistically significant. *; ** and *** indicates significant difference at 10%; 5% and 1% level respectively.

Panel A: Orphan versus Non orphan over the 1991-2005 period.

	Orphan	Non orphan	t	w
IPO	98	172		
AGE	19 (10)	21 (13)	0,7	1,4
LONG TERM DEBT	41,2 (3,5)	47,5 (6)	0,3	1,6*
SIZE	174,1 (42,1)	215 (54,3)	0,6	1,9**
VC AFFILIATION	18,28%	12,79%	-1,2	-1,2
UNDERWRITING SYNDICATE	1,96	3,14	3***	3,6***
UNDERPRICING	5,75%	11,14%	1,1	0,9

Table 1: Descriptive statistics (suite)

Panel B provides characteristics of orphans versus non orphans. An orphan (non orphan) means IPO without analyst coverage (with analyst coverage). IPO is number of issuing firm. INDUSTRY GROUP is defined at the first two digits code provided by Worldscope.

Panel B: Sample distributed by sub-periods.

	Orphan				Non orphan			
	1991 to 1998	1999 to 2000	2001 to 2005	1991 to 2005	1991 to 1998	1999 to 2000	2001 to 2005	1991 to 2005
IPO	38	28	32	98	92	63	17	172
INDUSTRY GROUP								
Apparel	1			1	1		1	2
Automotive	3			3	2	1		3
Chemicals		2		2	3			3
Construction	1	2	1	4		1	3	4
Diversified		1		1	4	2		6
Drugs, Cosmetics & Health Care	1		3	4	3			3
Electrical	1		2	3	3	3		6
Electronics	2	5	3	10	17	17	2	36
Financial	2		4	6	5	4	2	11
Machinery & Equipment	1	1	2	4	6			6
Metal Product Manufacturers	1			1	2		1	3
Miscellaneous	4	9	5	18	4	3	3	10
Paper	1			1	1			1
Recreation	1	2	2	5	5	1		6
Retailers	2	1		3	7	5		12
Textiles	3			3	1			1
Transportation					2			2
Utilities		1	5	6	1	3	1	5
Food & Beverages	1			1	8	2		10
Advertising agencies	1			1	2	1	1	4
Hotel & motel chains			1	1		1		1
Medical Services	1			1	2	1	2	5
Scientific equipment & supplies	1			1		1		1
Service Organizations	5	2	4	11	8	15	1	24
Wholesale	5	2		7	5	2		7

3 - Results:

3.1 - Long run performance of IPOs:

We report in this part the findings related to the performance of newly public firms over the five-year horizon. Two methodologies have been chosen in this study: the size and book-to-market adjusted buy-and-hold abnormal return as in Brav and Gompers (1997) and the Fama-French three-factor model.

3.1.1 - The event-time approach:

Table 2 shows that French IPOs have statistically significant long run underperformance from three to five-year horizon. IPOs have mean performance from -28,85% over the three years following their offerings to -68,10% over the five-year horizon (both *t* and *w* tests are statistically significant at 1% level). It is worth noting that 12-month performances of French IPOs over the entire period present a positive abnormal return.

Over the 1991-1998 period, like Degeorge and Derrien (2001) and Sentis (2001), we find that French IPOs have on average no abnormal performance over the three-year horizon. Once we extend the horizon to 4 years after the issuance, IPOs exhibit an underperformance statistically significant at 1% level by both *t* and *w* tests. This result is confirmed over the 60-month performances.

Table 2 : Long run performance of IPOs

Table 2 presents long run Buy and Hold Abnormal Returns over 12, 24, 36, 48 and 60-month performances. Sample consists of 270 French IPOs made between 1991 and 2005. Bootstrapped Skewness-Adjusted (t) test and Wilcoxon (w) non parametric test are presented to estimate whether BHAR is statistically significant. *, **and *** indicates significant difference at 10%, 5% and 1% level. Medians are in parentheses.

	1991 to 1998			1999 to 2000			2001 to 2005			1991 to 2005		
	Mean	t	w	Mean	t	w	Mean	t	w	Mean	t	w
BHAR 60	-61,76% (-75,11%)	-4***	-6,7***	-80,26% (-100,06%)	-2,7***	-6,6***	-56,34% (-27,04%)	-2,7***	-2,5***	-68,10% (-85,62%)	-5,4***	-9,8***
BHAR 48	-51,18% (-71,26%)	-3,9***	-5,4***	-59,17% (-77,98%)	-3,2***	-6,5***	-41,44% (-34,42%)	-2**	-2,7***	-52,78% (-71,53%)	-5,8***	-8,8***
BHAR 36	-18,52% (-50,30%)	-1,3	-3,9***	-40,34% (-58,39%)	-2,8***	-5,1***	-35,31% (-26,49%)	-3,8***	-3,3***	-28,85% (-53,57%)	-3,1***	-7,2***
BHAR 24	8,92% (-30,27%)	0,7	-1,8*	-29,02% (-59,13%)	-1,9**	-4,2***	-17,26% (-18,01%)	-2,2**	-2,1**	-8,62% (-35,44%)	-1	-4,9***
BHAR 12	16,36% (-3,93%)	2,9***	1,1	15,48% (-22,41%)	1	-1,3	-11,45% (-5,47%)	-2,2**	-1,9**	11,02% (-9,23%)	1,9**	-1

3.1.2 - The calendar-time approach:

We calculate long run performance using Fama-French three-factor model. The regression yields parameter estimates of α_i, β_i, s_i, and h_i. The parameter of interest in this regression is the intercept, α_i. A negative intercept indicates that after controlling for market, size, and book-to-market factors in returns, a sample firm has performed worse than expected. We use a calendar-time approach based on IPOs waves. Results are presented in table 3 and are corrected for heteroscedasticity.

Table 3: Fama-French three-factor model

Table 3 presents calendar-time approach based on IPOs waves. 1991 to 1998 and 2001 to 2003 are cold market periods whereas 1999 to 2000 and 2004 to 2007 are hot market periods. Coefficient estimates are reported in the table (with *t*-statistics in parentheses).

$$E(R_i) - R_f = \alpha_i + \beta_i[E(R_m) - R_f] + s_i E(SMB) + h_i E(HML) + \varepsilon_i$$

	1991 to 1998 130 IPOs	1999 to 2000 218 IPOs	2001 to 2003 241 IPOs	2004 to 2007 270 IPOs
α_i	-0,001	-0,015	-0,007	-0,003
	(-0,1)	*(-3,1)****	*(-1,7)**	*(-2,3)***
β_i	1,245	1,836	1,480	1,298
	*(13,4)****	*(7,2)****	*(6,9)****	*(27)****
s_i	-0,073	0,672	-0,072	-0,047
	(-0,4)	*(3,2)****	*(-0,4)*	*(-0,6)*
h_i	-0,081	-0,895	-0,265	-0,059
	(-0,7)	*(-5,4)****	*(-1,3)*	*(-0,7)*
R^2	0,70	0,91	0,89	0,96

Table 3 shows intercept (α_i) is negative over the four waves. Number of IPOs is cumulated across the sub-periods. IPOs tend to perform worse than expected. The intercept is statistically significant during hot market periods, that is underperformance is concentrated on this period (significant at 1% during internet bubble). Over the 2001-2003 and 2004-2007 periods, α_i is statistically significant at conventional levels, this indicates that older IPOs (IPOs went public in the 1990s) explain long run abnormal return in the 2000s.

3.2 – Long run performance of orphan versus non orphan IPOs.

We now distinguish IPOs according to financial analysts coverage. Findings appear in table 4. Panel A shows that orphan and non orphan have statistically significant long

run underperformance from two to five-year horizon (confirmed by both *t* and *w* tests at 1% level). We find statistical difference between long run underperformance of orphan and non orphan within the two years after the offering. Underperformance is -16.53% for non orphan compared to -30.17% for orphan over the two-year horizon, difference of 13.64% is significant at 10% level using *t* test. The 12-month performance shows analyst's ability to predict long run performance before the disclosure of the financial statements. At the time of the IPO, investors are limited to material information contained in the prospectus. Informational asymmetries are particularly high. It is worth noting that the first year following the offering, there is not abnormal performance for non orphan (average of 4.29%, t=0.9). The first 12 months following their offerings, orphans exhibit an underperformance of -11.41% whereas non orphans exhibit a performance of 4.29%. The difference of 15.7% is statistically significant by both *t* and *w* tests at 5% level.

Our hypothesis *H1* which posits that long run performance of non orphan IPOs may be superior to orphan IPOs is confirmed for the first year of floatation.

However, after the first year of floatation, the difference between long run performance of orphan and non orphan IPOs are not any longer significant. This may be due to some endogeneity between the firm's performance and analyst's recommendations. Indeed, after the first year of floatation, firms have published their financial statements which can influence the analyst's recommendation. Then, analyst's recommendations are linked to past performance for a little part.

These findings suggest that analyst coverage is indeed important to issuing firms during 1991 to 2005 but the market did not fully incorporate the perceived value of this coverage. Many other variables have been shown to influence long run performance of IPOs. Brav and Gompers (1997) find that IPOs with venture capital backing outperform non-venture capital backed IPOs. Venture capitalists provide potential future investment banking business to underwriters. So, analysts make favorable recommendations to keep venture capitalists happy. Jain and Kini (2000) find that venture-capital backed IPOs are characterised by greater analyst coverage. Rajan and Servaes (1997) and Aggarwal and al. (2002) argue that underpricing attracts analyst following. Bradley and al. (2003) and Corwin and Schultz (2005) find

that underwriting syndicate is related to research coverage. Therefore, if there is a relationship between analyst coverage and long run performance, then it could be a manifestation of these variables. We investigate these potential relationships by focusing on each of them separately.

In panel B, the results of venture capital affiliation are presented. We partition our sample by 'Yes' or 'No' that means venture capital backed IPOs or non venture capital backed IPOs respectively. We find that there is no difference in long run performance between venture capital backed and non venture capital backed IPOs that receive analyst coverage. This result holds for the orphan IPOs excepted for the 48-month performance. Globally, non orphan outperforms orphan once we control for the venture capital affiliation. Interestingly, there is a statistically significant difference in the 12-month performance between the venture capital backed orphan IPOs and the venture capital backed non orphan IPOs (-9.18% versus 7.31%). This could be attributable to the crucial role of financial analyst.

In panel C, we find that non orphan IPOs with a big (small) underwriting syndicate (where IPOs with the number of managing underwriters above the median level are classified as 'big', otherwise 'low') outperform orphan IPOs with a big (small) one. The first year following the IPO, the performance of non orphan with a big underwriting syndicate is 6.53% compared to -19.67% for non orphan with a big underwriting syndicate. The difference of 26.2% is statistically significant and confirmed by both *t* and *w* tests at conventional levels. Hence, it appears that analyst coverage creates value for IPOs once controlling for the size of underwriting syndicate.

As we discuss above, prior studies find a positive relationship between underpricing and analyst coverage. We would expect IPOs with high underpricing to be associated with analyst coverage. In Panel A, we document a positive relationship between analyst coverage and long run performance. Thus, the results in panel A indirectly imply a positive relationship between underpricing and long run performance, findings which would be inconsistent with the evidence in Rajan and Servaes (1997) or Carter and al (1998).Unlike these studies, panel D shows that high underpriced IPOs (where IPOs that have underpricing above the median level are classified as

'high', otherwise 'low') outperform low underpriced IPOs. Orphan with high underpricing has a 12-month performance of -5.97% compared to -19.66% for orphan with low underpricing. The difference of 13.69% is statistically significant at 10% level by *w* tests. This result remains statistically significant for 48 and 60-month performance by both *t* and *w* tests. The difference between high and low underpriced non orphan is not significant. Non orphan with low underpricing outperforms orphan with low underpricing over the one, three and four year horizon. Differences are statistically significant by both *t* and *w* tests at conventional levels. Finally, there is no difference in long run performance between orphan and non orphan with high underpricing. Hence, analyst's coverage has investment value only for the low underpriced IPOs.

To resume, these findings suggest that investors and market participants pay attention to analyst coverage when IPOs are venture capital backed, with a big underwriting syndicate and low underpriced.

Table 4: Long run performance of orphans vs non orphans over the 1991-2005 period.

Table 4 presents long run performance of French IPOs classified as Orphan's IPOs (without analyst coverage) and Non orphan's IPOs (with analyst coverage).Panel A focuses on analyst coverage whereas panel B, C and D partition orphan and non orphan by other characteristics. Panel B distinguishes orphan and non orphan by venture capital affiliation. Yes and No mean venture capital backed IPOs and non venture capital backed IPOs respectively. Panel C distinguishes orphan and non orphan by underwriting syndicate. Number of managers above the median level is classified as Big, otherwise Small. Panel D partitions Orphan's IPOs and Non orphan's IPOs by underpricing where IPOs that have underpricing above the median level is classified as High otherwise Low. Long run performance is computed as Buy and Hold Abnormal Returns over 12, 24, 36, 48 and 60-month performances. Bootstrapped Skewness-Adjusted (t) test and Wilcoxon (w) non parametric test are presented to estimate whether the BHAR or the difference between sample distribution are statistically significant. *; ** and *** indicates significant difference at 10%; 5% and 1% level respectively. Returns are winsorized at the 5% and 95% level

Panel A	Orphan's IPOs					Non orphan's IPOs					t	w
	N	Mean	Median	t	w	N	Mean	Median	t	w		
BHAR 60	63	-73,23%	-84,16%	-6,3***	-5,9***	150	-79,33%	-89,17%	-10,1***	-9,6***	-0,6	-0,6
BHAR 48	69	-67,26%	-78,08%	-6,3***	-6,4***	155	-56,07%	-70,26%	-7,3***	-8***	1,4	0,9
BHAR 36	83	-47,16%	-57,04%	-4,4***	-5,9***	153	-35,42%	-51,06%	-5,1***	-6,1***	1,4	1,3
BHAR 24	95	-30,17%	-45,61%	-3,8***	-5***	146	-16,53%	-29,45%	-2,8***	-3,6***	1,7*	1,3
BHAR 12	113	-11,41%	-16,53%	-2,3**	-3,2***	126	4,29%	-2%	0,9	0,4	2,3**	2,1**

	Orphan's IPOs				Non orphan's IPOs							
Panel B	Venture Capital affiliation								Yes		No	
	Yes	No	t	w	Yes	No	t	w	t	w	t	w
BHAR 60	-68,43%	-98,70%	1,4	1,2	-78,69%	-84,02%	0,4	0,3	-0,9	-0,9	0,6	0,6
BHAR 48	-61,32%	-98,60%	2,2**	1,9**	-58,11%	-43,77%	-0,9	-1	0,3	0,1	2,6***	2,2**
BHAR 36	-47,11%	-47,41%	0,1	0,4	-36,27%	-30,31%	-0,3	-0,1	1,2	1,1	0,7	0,8
BHAR 24	-27,82%	-40,93%	0,8	0,8	-16,82%	-14,55%	-0,1	-0,2	1,3	0,8	1,1	1,3
BHAR 12	-9,18%	-22,41%	1,1	1,3	7,31%	-13,81%	1,6	1,5	2,2**	2,1**	0,5	0,4

Table 4 (suite): Long run performance of orphans vs non orphans over the 1991-2005 period.

Table 4 (suite) presents long run performance of French IPOs classified as Orphan's IPOs (without analyst coverage) and Non orphan's IPOs (with analyst coverage). Panel C distinguishes orphan and non orphan by underwriting syndicate. Number of managers above the median level is classified as Big, otherwise Small. Panel D partitions Orphan's IPOs and Non orphan's IPOs by underpricing where IPOs that have underpricing above the median level is classified as High otherwise Low. Long run performance is computed as Buy and Hold Abnormal Returns over 12, 24, 36, 48 and 60-month performances. Bootstrapped Skewness-Adjusted (t) test and Wilcoxon (w) non parametric test are presented to estimate whether the BHAR or the difference between sample distribution are statistically significant. *; ** and *** indicates significant difference at 10%; 5% and 1% level respectively. Returns are winsorized at the 5% and 95% level.

	Orphan's IPOs				Non orphan's IPOs							
Panel C	Underwriting syndicate								Big		Small	
	Big	Small	t	w	Big	Small	t	w	t	w	t	w
BHAR 60	-76,59%	-84,74%	0,4	0,4	-80,69%	-83,73%	0,3	0,3	-0,2	-0,1	0,1	0,1
BHAR 48	-80,36%	-76,40%	-0,2	0,2	-60,23%	-57,46%	-0,2	0,1	1,5	1	1,6	1,5
BHAR 36	-46,86%	-51,35%	0,3	0,2	-27,57%	-42,63%	1,3	1,1	1,1	1	0,8	0,9
BHAR 24	-42,58%	-25,29%	-1,2	-1,1	-19,84%	-13,38%	-0,6	-0,4	1,5	1,3	1,1	0,7
BHAR 12	-19,67%	-5,44%	-1,2	-1,2	6,53%	1,79%	0,4	0,4	2**	1,7*	0,8	0,7

Panel D	Underpricing								High		Low	
	High	Low	t	w	High	Low	t	w	t	w	t	w
BHAR 60	-63,14%	-94,82%	1,7*	1,6*	-67,36%	-84,03%	1,3	1	-0,3	-0,3	0,8	0,7
BHAR 48	-53,04%	-89,34%	2,5***	1,7*	-45,46%	-63,55%	1,4	1,3	0,4	0,5	2,4***	1,6*
BHAR 36	-40,37%	-56,62%	1,2	1	-32,83%	-35,75%	0,2	0,2	0,5	0,6	1,6	1,6*
BHAR 24	-21,26%	-36,64%	1,2	0,6	-16,82%	-22,26%	0,4	0,6	0,3	0,5	1,2	0,7
BHAR 12	-5,97%	-19,66%	1,4	1,8*	6,88%	-0,91%	0,6	0,6	1,2	0,9	1,7*	1,6*

From this point, we investigate the characteristics of analyst coverage by distinguishing the number of coverage and the affiliation of financial analyst. Numerous studies document a positive relationship between the number of coverage and subsequent performance over long run performance or short-period windows (Das and al., 2006, Bradley and al., 2003). Findings appear in table 5. Panel A indicates that IPOs with high coverage (where the number of coverage above the median level is classified as 'high' otherwise 'low') perform better than IPOs with low coverage from 4 to 5 years after the IPO date (statistically significant). Panel B indicates that once we condition for the affiliation, IPOs covered by affiliated analysts do not underperform those covered by unaffiliated analysts. This result is inconsistent with the conflict of interest hypothesis but supports our hypothesis *H3c* which posits that there may be no difference in announcement effects between affiliated and unaffiliated recommendation because the market is naïve about the differential conflicts of interest.

Table 5: Long run performance based on analyst coverage and affiliation.

Table 5 presents long run performance of French IPOs covered by financial analysts. Panel A distinguishes IPOs with high coverage (where the number of analysts is above the median level) and IPOs with low coverage (where the number of analysts is below the median level).Panel B partitions analysts by affiliation where analysts whose employer is a managing underwriter is classified as affiliated, else unaffiliated. Long run performance is computed as Buy and Hold Abnormal Returns over 12, 24, 36, 48 and 60-month performances. Bootstrapped Skewness-Adjusted (t) test and Wilcoxon (w) non parametric test are presented to estimate whether the BHAR or the difference between sample distribution are statistically significant. *; ** and *** indicates significant difference at 10%; 5% and 1% level respectively. Returns are winsorized at the 5% and 95% level.

Panel A	Low coverage				High coverage				t	w
	Mean	Median	t	w	Mean	Median	t	w		
BHAR 60	-94,37%	-100,06%	-9,4***	-7,8***	-69,44%	-73,52%	-7,1***	-6,5***	2,5***	2,1**
BHAR 48	-70,49%	-80,14%	-5,5***	-7***	-47,24%	-61,76%	-4,4***	-4,9***	2,2**	2,1**
BHAR 36	-43,29%	-58,09%	-4***	-5,4***	-30,13%	-36,90%	-3,6***	-3,8***	1,2	1,5
BHAR 24	-18,69%	-38,53%	-2,4***	-2,8***	-20,18%	-29,65%	-2,7***	-3,3***	-0,2	0,3
BHAR 12	4,61%	-6,91%	0,7	0,1	0,14%	-5,76%	0,1	-0,2	-0,5	-0,2
Panel B	Affiliated				Unaffiliated				t	w
	Mean	Median	t	w	Mean	Median	t	w		
BHAR 60	-81,61%	-91,90%	-5,9***	-6,4***	-74,69%	-82,38%	-8***	-7,2***	0,3	0,7
BHAR 48	-60,04%	-71,11%	-6***	-6,2***	-52,53%	-68,97%	-4,6***	-5,2***	0,7	0,2
BHAR 36	-40,27%	-53,99%	-4,1***	-4,8***	-30,87%	-44,55%	-3,2***	-3,8***	0,8	0,7
BHAR 24	-22,43%	-42,44%	-2,5***	-3,3***	-10,29%	-26,30%	-1,2	-1,7*	1,1	1
BHAR 12	6,17%	0,5%	0,8	0,5	2,59%	-5,7%	0,4	0,1	-0,4	-0,4

Since French IPOs have long run abnormal underperformance, we perform multivariate regressions to explain this underperformance according to the interrelationships between several variables.

3.3 - Determinants of long run performance:

We have established that firms going public over the 1991-2005 period have long run abnormal underperformance.

From now we investigate whether ex-ante and ex-post variables could explain abnormal performance. We study the relation between long run performance and a variety of variables that were known to investors at the time of the offering (industry, shares offered, underwriters, venture-capital backed...) or occurring within the five years after the IPO date (specifically the financial analysts' recommendations). The null hypothesis of market efficiency predicts that all these variables are correctly estimated and can not explain long run performance. An alternative hypothesis is that some variables are systematically over or undervalued and impact long run performance.

The dependent variable of regression will be long run performance of French IPOs, computed as BHARs over 1, 3 and 5 years. We introduce the following independant variables in our analysis:

3.3.1 - Ex-ante variables and long run performance of IPOs.

- *VC affiliation* is a dummy variable equal to 1 if venture capitalists are affiliated to IPOs at the time of the offering and 0 otherwise. As in Brav and Gompers (1997), we would expect a negative coefficient.
- *Tech firm* is a dummy variable equal to 1 if IPO firms are technology firms, 0 otherwise. Most of technology firms in our sample went public during the internet bubble, period with strong uncertainty and aberrant pricing behaviour (see for instance Ljungqvist and Wilhelm, 2003). We would expect a negative coefficient.
- *Syndicate* is a dummy variable equal to 1 if the number of managing underwriters is above the median level and 0 otherwise. Corwin and Schultz (2005) find evidence of information production by syndicate members. In IPOs underwritten by large syndicates, the offer price is more likely to reflect the true value of the firm. IPOs with a large underwriting syndicate should outperform the others. We would expect the coefficient to be positive.

◆ *Hot market* is a dummy variable equal to 1 if IPOs went public during hot market and 0 otherwise. We identify 2 years of hot market: 1999 and 2000. According to previous studies, we would expect a negative coefficient.

◆ *Underpricing* is a dummy variable equal to 1 if IPOs have initial return above the median level and 0 otherwise. Rajan and Servaes (1997) and Carter and al. (1998) find evidence that IPOs with a high underpricing underperform the others, so we would expect a negative coefficient.

3.3.2 – Ex-post variables and long run performance of IPOs:

3.3.2.1-The characteristics of financial analysts:

◆ *Aff*: this variable equals to 1 if the financial analyst is affiliated and 0 otherwise. Michaely and Womack (1999) find, using a sample of 391 IPO in the USA over the period 1990 and 1991, that affiliated analyst recommendations perform more poorly than recommendations by unaffiliated analysts (consistent with Iskoz, 2003, Houston and al. 2006). Affiliated analysts issue recommendations that are overly optimistic (positively biased) and these analysts may be compelled to issue more positive recommendations on firms that have traded poorly in IPO aftermarket (consistent with James and Karceski, 2006). So, if the market is rational, then investors should discount affiliated recommendations compared to those of unaffiliated. We would expect the coefficient to be negative.

3.3.2.2-The nature of recommendations:

◆ *Code*: this is recommendations made by financial analysts within the five years following IPO. This variable is 2 for 'strong buy' recommendations, 1, 0, -1, and -2 for 'buy', 'hold', 'underperform', and 'sell' respectively. We suppose that better (worse) recommendations have a positive (negative) impact on the long run performance. We would expect the coefficient to be positive.

◆ *Favorable*: this is favorable recommendations made by financial analysts within the five years following IPO. This variable is 2 for 'strong buy' recommendations, 1 for 'buy', and 0 for 'hold', 'underperform' and 'sell'. We suppose that favorable recommendations have a positive impact on long run performance. We would expect the coefficient to be positive.

◆ *Defavorable*: this is unfavorable recommendations made by financial analysts within the five years following IPO. This variable is 2 for 'sell' recommendations, 1 for 'underperform',

and 0 for ‘hold’, ‘buy’ and ‘strong buy’. We suppose that unfavorable recommendations have a negative impact on long run performance. We would expect the coefficient to be negative.

- *Initiation:* this variable is 2 for ‘strong buy’ recommendation, 1, 0, -1, and -2 for ‘buy’, ‘hold’, ‘underperform’, and ‘sell’ respectively. We would expect a positive coefficient.
- *Upgrade:* we classify recommendation changes as *Upgrade*, which are upgrades from ‘sell’ to ‘hold’ or from ‘buy’ to ‘strong buy’ for example. It takes the value of 2 for ‘strong buy’ recommendation, 1, 0, and -1, for ‘buy’, ‘hold’, and ‘underperform’, respectively. We would expect a positive coefficient.
- *Downgrade:* we classify recommendation changes as *Downgrade*, which are downgrades from ‘strong buy’ to ‘buy’ or from ‘hold’ to ‘sell’ for example. It takes the value of 2 for ‘sell’ recommendation, 1, 0, and -1 for ‘underperform’, ‘hold’, and ‘buy’ respectively. We would expect a negative coefficient.

3.3.2.3-The strength of recommendations:

We test the interaction between the characteristics of analysts (whether or not analysts are affiliated) and the nature of recommendations. Six variables are used: *Aff*Code, Aff*Favorable, Aff*Defavorable, Aff*Initiation, Aff*Upgrade* and *Aff*Downgrade.*

3.3.2.4-Control variables:

- *Dispersion*: we introduce this as control variable of dispersion of recommendations. It represents the natural logarithm of the standard deviation of analysts’ recommendations within one, three and five-year following IPO. We interpret this variable as a proxy for differences in opinion about a stock. The bigger is *Dispersion*, the larger is context of strong uncertainty which can conduct investors to make irrationals’ choices. We suppose that dispersion of analysts’ recommendations have a negative impact on long run performance. So, we would expect a negative coefficient.
- *Coverage* is a dummy variable equal to 1 if the number of coverage is above the median level and 0 otherwise. Das and al. (2006) and Bradley and al. (2003) find a positive relationship between the number of coverage and subsequent performance. We would expect a positive coefficient.
- As in Jain and Kini (1994), we measure the change of operating performance such as *Return on asset*, *Asset turnover*, *Sales* and *Capital expenditure.* The growth in these measures may be able to provide an explanation for the underperformance experienced by IPOs during the five years after going public. The change in operating performance is measured for one,

three and five years after the IPO date. *Return on asset* is operating income before depreciation and taxes divided by total assets (COMPUSTAT data item 13 divided by data item 6). *Asset turnover* is sales (COMPUSTAT data item 12) divided by total assets. *Sales* represent gross sales reduced by cash discounts, trade discounts, and returned sales and allowances. *Capital expenditure* (COMPUSTAT data item 128) is cash outflow or funds used for additions to the company's property, plant, and equipment, excluding amounts arising from acquisitions.

Three multivariate regression models are reported to estimate the weight of recommendations made by analysts to explain long run performance. Model 1 considers the whole recommendations whereas Model 2 distinguishes favourable and unfavorable recommendations. The interest of this separation is that the market can asymmetrically react to favorable news and unfavorable news (see for instance Cooper and al., 2001; Bradley and al., 2008; Jegadeesh and Kim, 2006). In model 3, we suppose as in previous studies that initiation, upgrade or downgrade convey more informations than the value of recommendation itself (see for instance Irvine, 2003; Jegadeesh and al., 2004).

Model 1:

$$BHAR = \alpha + \beta_1 Aff + \beta_2 Code + \beta_3 Aff*Code + \beta_4 Dispersion + \beta_5 Coverage + \beta_6 Hot\ market + \beta_7 Tech\ firm + \beta_8 Syndicate + \beta_9 Underpricing + \beta_{10} Non\ VC\ backed + \beta_{11} Return\ on\ asset + \beta_{12} Asset\ turnover + \beta_{13} Sales + \beta_{14} Capital\ expenditure + \varepsilon$$

Model 2:

$$BHAR = \alpha + \beta_1 Aff + \beta_2 Favorable + \beta_3 Defavorable + \beta_4 Aff*Favorable + \beta_5 Aff*Defavorable + \beta_6 Dispersion + \beta_7 Coverage + \beta_8 Hot\ market + \beta_9 Tech\ firm + \beta_{10} Syndicate + \beta_{11} Underpricing + \beta_{12} Non\ VC\ backed + \beta_{13} Return\ on\ asset + \beta_{14} Asset\ turnover + \beta_{15} Sales + \beta_{16} Capital\ expenditure + \varepsilon$$

Model 3:

$$BHAR = \alpha + \beta_1 Aff + \beta_2 Initiation + \beta_3 Upgrade + \beta_4 Downgrade + \beta_5 Aff*Initiation + \beta_6 Aff*Upgrade + \beta_7 Aff*Downgrade + \beta_8 Dispersion + \beta_9 Coverage + \beta_{10} Hot\ market + \beta_{11} Tech\ firm + \beta_{12} Syndicate + \beta_{13} Underpricing + \beta_{14} Non\ VC\ backed + \beta_{15} Return\ on\ asset + \beta_{16} Asset\ turnover + \beta_{17} Sales + \beta_{18} Capital\ expenditure + \varepsilon$$

Table 6 reports our regression results (corrected for heteroscedasticity and multicollinearity). Our three models are statistically significant and explain long run performance of French IPOs. The explanatory power of the model is relatively strong (from 20% to nearly 40%) and superior compared to previous studies (for instance, model in Degeorge and Derrien (2001) explain long run performance from 30% over the one-year horizon to 19% over the three-year horizon, Bhabra and Pettway (2003) find R^2 from 1% to approximately 10% according to models). Table 6 shows, over the five-year horizon, that the coefficient on *Aff* is positive and significant at the 1% level. However, the affiliation effect totally disappears when we evaluate the strength of recommendation. Variables as *Aff*code*, *Aff*initiation*, *Aff*favorable* are all non significant. Thus, the recommendations made by affiliated analysts have no influence on long run performance, so as we hypothesize, we could suppose that market seems naïve about the differential conflicts of interest and confirm the hypothesis *H3c* (consistent with table 5 Panel B). The nature of recommendations is statistically significant for three and five-year horizon. *Code*, *Favorable* and *Initiation* variables are significantly related to long run performance as we hypothesize. As recommendations could be viewed as endogenous we control for operating performance variables and we are able to provide an explanation for the underperformance experienced by IPOs. Once we control for operating performance variables, it appears that recommendations made by financial analysts explain in a very significant way (at 5% level) long run performance over the three and five-year horizon. 'Strong buy' and 'buy' ('underperform' and 'sell') recommendations are positively (negatively) related to long run performance. Hence, recommendations have investment value and the hypothesis *H2* that the nature of recommendations has an impact on long run performance could be confirmed. The coefficient on *Favorable* is positive as we expected, favorable recommendations are positively related to long run performance (significant at 10% level) whereas the defavorable ones have no impact. We note that market reacts asymmetrically for favorable news than unfavorable ones. *Upgrade* and *Downgrade* variables have no impact on long run performance unlike *Initiation* that is significantly related to long run performance over the three-year horizon. This finding suggests that the market pays more attention to the value of recommendations itself than through changes in the recommendations. This result is inconsistent with the evidence in Irvine (2003) and Jegadeesh and al. (2004). It is worth noting that the first year following the issuance the nature of recommendations has no impact on long run performance. This could imply that investors fully incorporate the information contained in the recommendations at the time of the offering. *VC affiliation* is negatively and significantly related to long run performance of IPOs

over one, three and five-year horizon. Market reacts unfavorably to the presence of venture capital financing at the time of an IPO (inconsistent with Brav and Gompers, 1997, Megginson and Weiss, 1991 and Barry and al., 1990). This result is broadly consistent with the univariate result in table 4 panel B. Finally, the dispersion of analysts is not correlated to long run performance whereas the coefficient is the highest over the five-year horizon. *Hot market* variable is positively related to 12-month performance of IPOs (statistically significant at 5% level) but the coefficient is not significant to explain long run performance over the three and five-year horizon.

Table 6: Determinants of long run performance of IPOs over the 1991-2005 period.

The dependant variable is Buy-and-Hold Abnormal Return over a 60, 36 and 12 -month horizon. Returns are winsorized at the 5% and 95% level. Observations correspond to analysts recommendations.* (and respectively, **, ***) indicates that the coefficient is significantly different from 0 at a 10% (and respectively, 5%, 1%) level using Student t-statistics. We use cluster regression model. This specifies that the observations are independent across groups but not necessarily independent within groups.

	BHAR 60 months 2027 observations (46 IPOs)			BHAR 36 months 1316 observations (48 IPOs)			BHAR 12 months 438 observations (35 IPOs)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	-0,673***	-0,679***	-0,662***	-0,559**	-0,565**	-0,560**	-0,220	-0,225	-0,228
Aff	0,154***	0,159***	0,132**	-0,034	0,021	-0,035	-0,004	-0,021	-0,028
Code	0,023**			0,034**			-0,007		
Favorable		0,028*			0,039*			-0,003	
Defavorable		-0,015			-0,025			0,018	
Initiation			0,014			0,048***			0,005
Upgrade			-0,002			0,026			-0,005
Downgrade			-0,020			-0,031			0,059
Aff*Code	-0,044			0,012			-0,016		
Aff*Favorable		-0,049			-0,031			-0,004	
Aff*Defavorable		0,035			-0,126			0,279	
Aff*Initiation			-0,046			0,011			0,002
Aff*Upgrade			0,026			0,029			-0,019
Aff*Downgrade			0,038			-0,045			-0,390
Dispersion	1,126	1,123	1,113	-0,331	-0,332	-0,324	-0,011	-0,013	-0,011
Coverage	-0,017	-0,016	-0,015	-0,194	-0,195	-0,190	0,019	0,018	0,029
Hot market	0,032	0,032	0,031	0,179	0,179	0,175	0,306**	0,304**	0,304**
Tech firm	0,027	0,027	0,028	0,024	0,024	0,024	-0,062	-0,060	-0,064
Syndicate	-0,030	-0,030	-0,031	0,160	0,160	0,163	0,177	0,179	0,174
Underpricing	0,026	0,026	0,026	0,199	0,198	0,194	0,026	0,028	0,019
Non VC backed	-0,309*	-0,309*	-0,310*	-0,335*	-0,335*	-0,335*	-0,576***	-0,575***	-0,573***
Return on asset	-0,163	-0,163	-0,164	0,211	0,215	0,210	0,233	0,233	0,231
Asset turnover	-0,511*	-0,511*	-0,513*	-0,210	-0,215	-0,208	-0,361	-0,359	-0,366
Sales	-0,060	-0,060	-0,059	-0,096	-0,095	-0,096	0,244	0,239	0,234
Capital expenditure	0,118	0,118	0,11	0,097**	0,097**	0,097**	0,152	0,152	0,151
R^2	0,31	0,31	0,31	0,21	0,21	0,22	0,38	0,38	0,38

4 - Conclusion:

We examine the long run performance of French IPOs carried out between 1991 and 2005. Unlike prior studies applied to French market we find that IPOs in our sample performed negatively relative to comparison portfolio over the 1991-2005 horizon. We compare the long run performance of firms that do not receive analyst coverage (orphan) to those that do (non orphan). This abnormal long run performance is much severe for orphans' IPOs than non orphans' IPOs from the one to three-year horizon. The evidence suggests that analyst coverage is indeed important to issuing firm but the market do not fully incorporate the perceived value of this coverage. Once we control for other characteristics that have been shown to influence long run performance of IPOs we find that investors and market participants pay attention to analyst coverage when IPOs are venture capital backed, with a big underwriting syndicate and low underpriced.

We find that firms with high coverage outperform those with low coverage from three to five-year horizon. Once we condition for the affiliation of the analyst making a recommendation, IPOs covered by affiliated analysts do not underperform those covered by unaffiliated analysts. This result is inconsistent with the conflict of interest hypothesis (Michaely and Womack, 1999) but supports the naïve market hypothesis which posits that there may be no difference in announcement effects between affiliated and unaffiliated recommendation because the market is naïve about the differential conflicts of interest.

Multivariate regression analysis establishes that analyst recommendations are significantly related to long run performance of IPOs. Then we corroborate the crucial role of financial analysts in the production and interpretation of IPOs' information releases.

Notes

1. It is worth noting that affiliated analyst recommendations are viewed as more credible following recent regulatory reforms (Cliff and Tech, 2006, Kadan and al., 2009).
2. Derrien (2006) finds that security analysts increase their bank's chance of managing future IPOs when they have issued generous recommendations to recent IPOs managed by their own bank.

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