

## EQUITY RESEARCH CREDIBILITY IN THE ITALIAN STOCK MARKET

*Enrico Maria Cervellati\**, *Antonio C. F. Della Bina\*\**, *Pierpaolo Pattitoni\**

### Abstract

In this paper we verify the degree of reliability of brokerage analysts' recommendations, with reference to Italian IPOs and measure their long-term performance, distinguishing among affiliated and non-affiliated analysts, to test the conflict of interests hypothesis against an alternative 'superior information hypothesis'. The empirical evidence shows that IPOs recommended by affiliated analysts have a long-run performance that is worse than firms recommended by unaffiliated ones by a relevant amount. This result supports the conflict of interest hypothesis, while it seems to be inconsistent with the hypothesis that underwriter analysts have superior information.

**Keywords:** Initial Public Offerings, Brokerage Analysts, Conflict of Interests, Market Reaction, Long-run Performance

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\* All authors - Department of Management - University of Bologna

Via Capo di Lucca, 34 - 40126 Bologna

Tel: +39 (0)51 2098103 - Fax: +39 (0)51 246411

e-mail: [enrico.cervellati@unibo.it](mailto:enrico.cervellati@unibo.it), [antonio.dellabina@unibo.it](mailto:antonio.dellabina@unibo.it), [pierpaolo.pattitoni@unibo.it](mailto:pierpaolo.pattitoni@unibo.it)

\*\* Corresponding author

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### Introduction

Recently there has been a lively debate on the role of brokerage analysts in making recommendations to their clients. In particular, most analysts continued to issue 'positive' recommendations even if the stocks, as well as the market, performed very poorly. The problem is: are these analysts overconfident or too much optimistic, or are they just in conflict of interest? By 'conflict of interest' we intend the situation in which the responsibility of an analyst towards his/her clients to provide correct information and the incentive to give recommendations aligned with her bank's interests, with reference to its corporate finance arm. In other words, it could be in conflict for an underwriter analyst to give a negative rating to a firm that a bank has just taken public. Therefore, the analyst could be willing, or forced, to issue a positive report, or to avoid issuing a negative one, even when the firm would deserve it.

One of the main sources of conflict is due to the analysts' compensation structure that seems to be often determined, at least in part, by analysts' helpfulness to the corporate finance arm [Dugar e Nathan (1995), Lin e McNichols (1998), Dechow, Hutton e Sloan (2000)], (also see Bradshaw, Richardson e Sloan (2003) e Lin, McNichols e O'Brien (2003) for an analysis of the relationship between sell-side analysts and corporate finance activities of investment banks and the impact of this effect on the process of issuing recommendations). The other important part of their compensation is

their reputation that is based on the quality and timeliness of the recommendations they provide to investors (the reputation effect analysts' career opportunities has been presented in Hong e Kubik (2003)). These two aspects may conflict when a firm that the bank of the analyst has taken public is under coverage.

We consider the IPO market since in this case the potential conflict of interest is higher. Apart from the fact that this particular market is very profitable for investment banks, in this case the recommendations are particularly valuable since most firms are unknown by investor prior to listing and therefore need coverage to attract attention on them. Finally, a series of positive reports could improve the probability that the underwriter will be chosen for the next security offering. All these elements push on analysts to issue positive recommendations.

One of the implications of this conflict of interest hypothesis is that underwriter analysts could be much more 'optimistic' in their recommendations if compared to unaffiliated analysts, meaning that on average they issue more positive reports than independent analysts. In this case, if the market is efficient, it should react discounting for the difference between affiliated and non-affiliated analysts' recommendations.

There is, however, an alternative explanation of this empirical evidence that we could call 'Superior Information Hypothesis'. It states that investment banks have superior information on firms they have

taken public, therefore their reports would not only be unbiased, but also more accurate. This alternative hypothesis can be considered credible if we think that information asymmetry is very high in initial public offerings. If this explanation results to be correct, then the market should react with a premium to underwriter analysts for the more accurate information they possess. In the post-IPO period this would imply a superior result for investors following underwriter recommendations.

These two alternative explanations are testable, looking at the long-run performance of IPOs differentiated by underwriter relationship.

The present work has two main objectives. The first is to verify if an underwriter analyst has some incentives to issue more positive recommendations than non underwriter analysts. The second is to measure in terms of long-run performance the reactions of the market after the diffusion of the report, to verify the degree of accuracy of the recommendation.

The paper consider the Milan Stock Exchange and in particular two segments of it: the 'Borsa' (more exactly Borsa MTA), i.e. the ordinary segment of the Italian stock market, and the 'Nuovo Mercato' that includes those firms that have high-tech characteristics. We consider the price-sensitive information produced by analysts, with particular attention to 'buy' recommendations, in the post-IPO period, from one day to thirty months.

Using an event study methodology, we find very interesting results.

First, we analyze the time distribution of IPOs in the sample period, finding support for the phenomenon known as 'hot-issue market'.

Second, the market of the studies is quite concentrated: the IPOs in the first quartile of capitalization post-IPO are objective of about 40% of the total number of reports diffused in the first year of negotiation

Third, it seems that underwriter's analysts tend to issue more positive recommendations than analysts from other brokerage firms: non independent analysts display a greater aversion to produce negative reports; they have in fact produced 'non negative' recommendations in about the 94% of the cases whereas the 'negative' reports are just the 2%. The same figures for independent analysts are, respectively, 83% of 'non negative' recommendations and 11% of 'negative'.

Finally, the long-run performance of firms only recommended by their underwriters is significantly worse than the performance of firms recommended by unaffiliated analysts: the difference is significant both after one year (about 43% if measured by CAR and 39% if measured by BHR) and after two years from the IPO date (45% with CAR, 39% with BHR). These results seem to be consistent with the 'conflict of interest hypothesis' while they do not confirm the alternative 'superior information hypothesis'.

The paper is structured as follows: the first paragraph gives a brief review of the literature; the second describes the sample we used; the third highlights the distribution of recommendations; the fourth shows the market reaction to the recommendations; finally we present some concluding remarks.

## 1. Literature review

The role of reports and of price-sensitive information produced by analysts has been studied in the literature, following different approaches.

Some researches have documented the tendency of financial analysts to be iper-optimistic. Dugar and Nathan (1995), for example, claim that an important component of this iper-optimism is due to the relationship between the financial intermediary that pays the analyst and the covered firm. The prevalence of positive recommendations could be explained by the fact that the analyst is worried about jeopardize the relationship between his bank and the firm that has been taken public.

McNichols and O'Brien (1997) make the hypothesis that iper-optimism could be inferred by behavioral explanation and due to selection bias, i.e. analysts could decide to initiate the coverage of a firm since their valuation are too optimistic. Therefore, financial analysts start covering a firm with positive recommendations.

Womack (1996) measures the market reaction in the United States, after the diffusion of the recommendations.<sup>1</sup> The results highlight that the stocks that have been objective of changes in recommendations show an extra return adjusted for the market significantly different from zero: +2.4% if the rating improves, -9.1% if the opposite event occurs. The asymmetry in the two cases can be explained with the higher frequency with which brokerage analysts tend to improve their recommendations and with the cost associated with the publication of a negative rating on a firm.<sup>2</sup>

The optimism bias that affects analysts, and its potential effects on the IPO market are studied by Rajan and Servaes (1997). The authors, analyzing a sample of US stock market IPO between 1975 and 1987, highlight that at the moment of listing, analysts systematically overestimate the future earnings (upward bias). The result is that analysts are in general optimistic, particularly in the long run (i.e. when forecasting intervals are longer).

The analysis also extends to the measure of the performance of the stocks that are covered by analysts. In this case the firms with greater growth

<sup>1</sup> Womack's work is subsequent to the study of Stickel (1995) that is based on a sample of 17,000 changes of recommendations issued by brokerage analysts between 1988 and 1991.

<sup>2</sup> See Belcredi, Bozzi and Rigamonti (2003) on the effects of changes in recommendations in the Italian case.

opportunities record performances significantly lower if compared with their benchmarks, while those with lower expected rates of growth record performances that are higher than the benchmark ones.

Starting with the analysis of returns of a sample of American IPO in the period 1990-91, Michaely and Womack (1999) want to verify two hypotheses. The first, that could be defined as 'superior information hypothesis', affirms that the market reaction is higher, in terms of extra returns, when the recommendation is diffused by an analyst that works for the lead manager of the operation. In this case, it is possible to think that the analyst has superior information since he has closely worked with the firm that has been taken public, during the due diligence period. Superior information should result in a greater degree of accuracy of predictions and, as a consequence, in a higher market reaction. The second hypothesis, the 'conflict of interests hypothesis', instead claims that investors react to a greater extent when the recommendation comes from independent analysts if compared to the publication of a study from non-independent analysts that could have a conflict of interests.

The empirical evidence supports the second hypothesis, since in the long run the IPOs recommended only by affiliated analysts record an abnormal return much lower with respect to those that have obtained positive reports only by non-affiliated analysts. However, the same authors admit that an explanation for this result could be found in a sort of overconfidence or excessive optimism of the analysts that, having followed the firm before listing, are convinced that those firms could never record poor performances. It is difficult, however, to verify this third hypothesis. The solution adopted by the authors is to use a questionnaire sent to analysts and money managers. The answers received support, in the majority of cases, the hypothesis of potential conflict of interests.<sup>3</sup>

Barber, Lehavy, McNichols and Trueman (2001) analyze how the degree of consensus (i.e. the average judgment resulting from overall coverage of a stock) can help investors to put in place profitable investment strategies. The authors' conclusion is that the semi-strong form of efficiency of the market is probably not violated by the diffused information. The analysis support the hypothesis that the market significantly react to analysts' information but the value of this information decays quite rapidly within four or six weeks from a *buy* recommendation and longer for sell recommendation.

Nevertheless, the authors highlight how, during year 2000 the firms recommended less favorably from analysts have recorded on average market adjusted returns of 48,66% while those most

favorably recommended have lost on average about the 31,20 %, a difference of about 80%.

Bradley, Bradford and Ritter (2003) analyze the recommendations issued by analysts on US IPOs, from 1996 to 2000, with particular attention to the ones immediately following the so-called 'quiet period'.<sup>4</sup>

The authors find that the coverage by analysts initiates immediately in the 76% of the cases, almost always with a positive report. In a five-days window, these covered firms show an average extra return of about 4.1%, relative to a modest 0.1 % relative to stocks not covered. The higher the number of analysts following the firm, the bigger the positive market reaction, showing the greater interest of the market towards stocks covered by analysts, with respect to the ones that are neglected. Furthermore, the authors find that the market does not distinguish among independent or non-independent analysts' recommendations.

With regard to the Italian market, Fabrizio (2001) has done an empirical analysis of the reports published by analysts and collected by the Consob (the Italian Stock Exchange Commission) between 1998 and 1999 on the companies listed in the Milan Stock Exchange. The results highlight that the 58.2% of the studies contained a buy recommendation, while just the 6.1% indicated to sell. The distribution of the reports shows that financial intermediaries are more interested in covering large companies, or firms with good growth opportunities, in particular those listed in the 'Nuovo Mercato'. Furthermore, the author analyses the trading activity of the intermediaries, verifying that in several cases they operated in the opposite direction with respect to the recommendation they had just given to investors.

Bertoni, Giudici, Randoni and Rorai (2003) describe the results of a systematic monitoring of the reports published by financial analysts on the firms listed at the Milan Stock Exchange between 1999 and 2001.

Their analysis highlights some interesting phenomena: (i) the valuations are over-optimistic relative to the real operating performances, particularly in the short run, in a systematic fashion; (ii) the judgments expressed in the reports systematically tend to converge, independently of the market cycles; (iii) the valuations expressed by analysts that work for underwriters and market makers result, in general, the more optimistic, coherently with the conflict of interests hypothesis; (iv) the diffusion, often limited and not timely, of the reports generates asymmetric information between professional and unsophisticated investors, decreasing market efficiency.

<sup>3</sup> It clearly remains to be verified if this result is significant and if the sample of analysts and money managers is representative, nevertheless the signal is very clear.

<sup>4</sup> The quiet period is a time period of twenty-five calendar days following the IPO date on the US stock markets during which the underwriter's analysts are obliged not to issue any report.

## 2. Sample Description

To reach these ends we consider a precise informative set of reference. We examine all the monographic studies ('reports' from now on) having as objective the IPOs in the Italian Stock Market Exchange between 2000 and 2001, diffused by financial analysts operating on behalf of authorized financial intermediaries. The choice to focus on IPOs is justified by the very critical role of financial analyst in transforming the data coming from the

universe of companies that have been recently listed, and that therefore are less known by the public of investors, in accurate information that the investors can use to take their decisions about trading (The evolution of the role of financial analyst in the brokerage and corporate finance activities of investment banks is analyzed by Chung (2001)). We consider 63 IPOs, 45 in year 2000 and 18 in year 2001 (Table 1).

**Table 1.** Description of the sample

The sample is constituted by 63 IPOs concluded between the 01/01/ 2000 and 12/29/2001. Information about the operations that took place in 2000-2001 has been obtained from the website of Borsa Italiana S.p.A., the society that administer the Italian Stock Exchange [www.borsaitalia.it](http://www.borsaitalia.it). The time series of the market indexes MIB (historical MIB), MIB 30 e Numtel are obtained from the database *Datastream*. Part A of the table contains the classification of the IPOs per month and year of conclusion. Part B of the table, instead, highlights the monthly concentration of IPOs distinct per year and market of quotation.

**Part A.** Monthly distribution of IPOs in 2000-2001 and value (at the end of the month) of the indexes MIB, MIB 30 and Numtel

Month and Year	MIB	MIB 30	Numtel	Number of IPOs
Jan-00	27570	42130	7149	0
Feb-00	32963	49580	14388	0
Mar-00	30727	46693	12081	1
Apr-00	30138	45750	9666	2
May-00	30535	45933	7817	3
Jun-00	30686	46736	6848	4
Jul-00	30649	46429	7342	11
Aug-00	31857	47973	7620	6 <sup>(1)</sup>
Sep-00	30506	45329	7210	0
Oct-00	31655	47628	6587	6
Nov-00	31427	46483	5757	4
Dec-00	29681	43719	4578	8 <sup>(1)</sup>
Jan-01	30187	44963	5248	0
Feb-01	27576	40203	4158	1
Mar-01	26705	38991	3795	2
Apr-01	27758	40937	3807	0
May-01	26606	38872	3504	2
Jun-01	25430	37071	2848	5 <sup>(1)</sup>
Jul-01	24980	36738	2259	5
Aug-01	23865	34637	2199	0
Sep-01	19955	29392	1680	0
Oct-01	20845	30672	2201	0
Nov-01	21870	31736	2613	1
Dec-01	22232	32263	2492	2
Total				63

**Part B.** Monthly distribution of IPOs by market of quotation

Month	IPOs 2000		IPOs 2001		Total
	Borsa	Nuovo Mercato	Borsa	Nuovo Mercato	
January	0	0	0	0	0
February	0	0	1	0	1
March	0	1	0	2	3
April	0	2	0	0	2
May	1	2	2	0	5
June	1	3	4	1 <sup>(1)</sup>	9
July	5	6	3	2	16
August	0	6 <sup>(1)</sup>	0	0	6
September	0	0	0	0	0
October	0	6	0	0	6
November	2	2	1	0	5
December	4 <sup>(1)</sup>	4	2	0	10
Total	13	32	13	5	63

Source: our elaborations of data of the Milan Stock Exchange and from Datastream.

<sup>(1)</sup> The monthly total include an operation of multiple listing.

The analysis of the monthly distribution of IPOs with respect to the market indexes shows some interesting results. The number of IPOs appears to be positively correlated to the general index MIB,

which is consistent with the phenomenon known as 'hot-issue markets', i.e. the fact that IPOs are usually concentrated in periods of booms in the stock markets (see Figure 1).

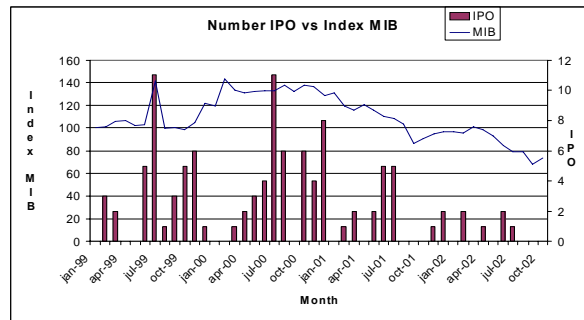


Figure 1. Monthly distribution of the number of IPOs in 2000-2001 and performance of the general market index MIB

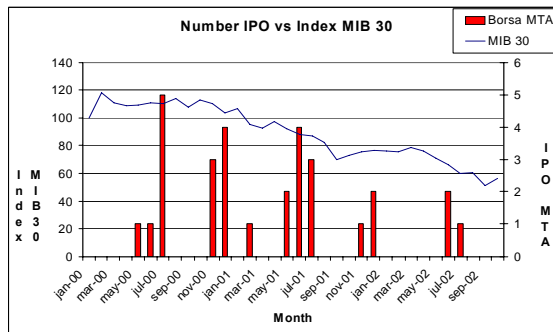


Figure 2. Monthly distribution of the number of IPOs in the Borsa MTA in 2000-2001 and performance of the market index MIB 30

This phenomenon seems to be also confirmed if we consider the IPOs on the ordinary segment of the Italian Stock Exchange ('Borsa MTA') with respect to the index MIB 30 (that includes the 30 largest firms in terms of capitalization) that are concentrated for the two years considered in the sub-periods of May-July and October-December (see Figure 2).

It is interesting to observe the trend followed by the IPOs in the 'Nuovo Mercato' if compared with the Numtel index. Even if this segment has suffered losses of about 28.4% in year 2000 and about 43% in year 2001, almost 80% of the firms that constitute the Numtel went public in these two years.

It should be underlined that the sub-period characterized by the greater number of quotations in the 'Nuovo Mercato', i.e. April-June 2000 with 19 IPOs out of 32, does not seem to be consistent with the above-mentioned observation of hot-issue markets, since there is not a punctual correspondence with the period of maximum increase of the Numtel index between June 1999 and January 2000.

The explosion of the 'Internet Bubble', that in Italy took place in February and March 2000, does not seem to have dissuaded firms and financial intermediaries to conclude the IPO procedure.

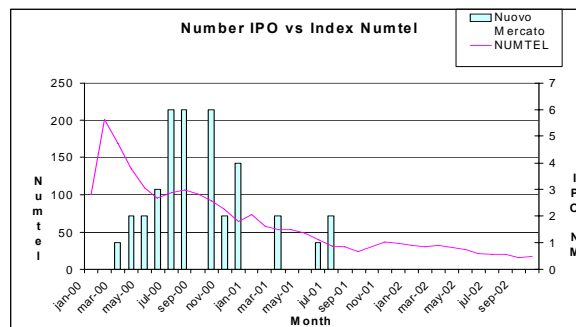


Figure 3. Monthly distribution of the number of IPOs in the Nuovo Mercato in 2000-2001 and performance of the market index Numtel

A partial, even if late, confirm to the hypothesis of reduction of the number of IPOs in correspondence of the bear market is verified starting from January 2001 and for all the year 2002 that has been characterized by a total lack of quotation in the 'Nuovo Mercato' (Figure 3). A possible explanation of the not perfect correlation between the temporal distribution of IPOs in the 'Nuovo Mercato' and the trend of the Numtel index should probably be found in the time that is needed to implement a listing operation. If we would shift the instant of negotiation of the IPOs in the period April-August 2000 by four or five months (the average time needed to conclude the IPO operation) then the choice to go public will appear perfectly justified since it would correspond

with the period of maximum increase of the reference index from the initial values of June 1999.

To value the behavior of financial analysts in issuing recommendations on IPOs, we considered 1,099 reports over the period 2000-2002: 37 (about 3% of the total) are related the pre-IPO period, and 1,062 (about 97%) with regard to the post-IPO period. The main source of information was the website of the Borsa Italiana S.p.A., which includes a dedicated section on IPOs (see Table 2). As highlighted in Part A, the great part of the reports (roughly 83% of the studies considered) refers to firms listed in year 2000, while only 184 studies (about 17% of the total) have as objective firms listed in year 2001.

**Table 2.** Distribution of monographic studies

**Part A.** Number of monographic studies per year of IPO

	Year of diffusion			Total	Total (%)
	2000	2001	2002		
No. of studies per IPO in 2000	96 (10%)	562 (62%)	257 (28%)	915 (100%)	83%
No. of studies per IPO in 2001	0 (0%)	74 (40%)	110 (60%)	184 (100%)	17%
Total	96 (9%)	636 (58%)	367 (33%)	1099 (100%)	100%

A greater degree of accuracy can be obtained re-classifying the number of monographic studies with

respect to the first year of quotation for each IPO (see Part B).

**Part B.** Number of monographic studies starting from the first year of negotiation

	Period of negotiation				Total	Total (%)
	Pre-IPO	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year		
IPO 2000	31 (3%)	460 (50%)	370 (40%)	64 (7%)	915	83%
IPO 2001	6 (3%)	154 (84%)	25 (13%)	0 (0%)	184	17%
Total	37 (3%)	614 (56%)	395 (36%)	64 (5%)	1,099 (100%)	100%

In this case, instead of considering the absolute number of reports diffused for every year, one considers as initial reference point the date of the starting of negotiations of each firm and then compute the total number of reports diffused in different windows of time.

In particular, it is possible to consider the reports issued in the sub-periods [t-n, t], (t, t+12], (t+12, t+24] and (t+24, t+36] where t-n represents the period pre-IPO, t is the first day of negotiations for every IPO and a month is constituted by 21 days of negotiation. The vectors obtained in this way permits

to observe how the great part of the studies diffused for the IPOs in 2000 and 2001 are concentrated in the first year of negotiation (respectively the 50% and the 84% of the total of the related years).

This result is interesting considering the duties borne by the financial intermediaries that participate at the IPO process. Following the regulations of the Milan Stock Exchange (See the website of Borsa Italiana), the 'sponsor' nominated by the firm has the duty to publish at least two financial reports in the first year of quotation. In addition, further obligations are required for firms who want to be

listed in the ‘Nuovo Mercato’ that have to choose a ‘Specialist’, i.e. an authorized intermediary that assumes the duty of market maker on the stocks issued. With regard to the degree of coverage, i.e. the number of listed companies in 2000-2001 that have been objective of study at least from the first year of quotation, the figure is 98.48% of the total of the

sample considered (see Table 2, Part C); in fact, only a firm in the ‘Nuovo Mercato’ has not been covered by any report. On average, during the first year of negotiation, firms listed in 2000 have received 10.2 reports, while firms listed in 2001 received 11 reports.

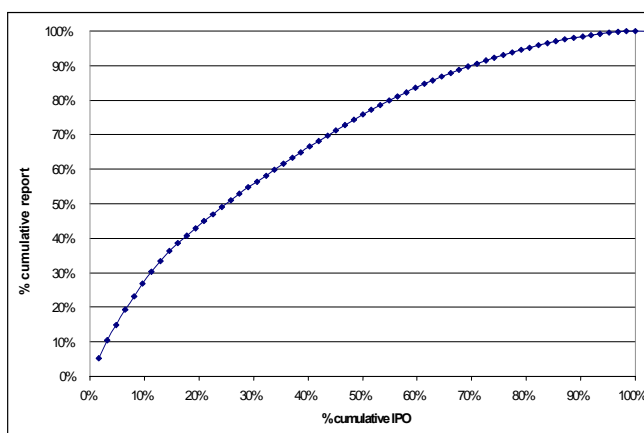
**Part C. Degree of coverage of firms objective of study in the first year of quotation**

	Number of IPOs objective of study				
	IPOs 2000		IPOs 2001		Total
	Borsa	N. Mercato	Borsa	N. Mercato	
None	0	0	0	1	1
1	2	0	0	1	3
2-5	1	6	4	2	13
6-9	2	15	3	1	21
10-19	6	9	5	0	20
20-29	0	2	1	0	3
≥ 30	2	0	0	0	2
Total number of firms objective of study	13	32	13	4	62
Total number of IPOs	13	32	13	5	63
Degree of coverage %	100	100	100	80	98.40

It is also confirmed the hypothesis, already verified in the literature, of a certain degree of correlation between the average number of reports produced and the post-IPO capitalization of the firm objective of study. Fabrizio (2001), shows that between 1998 and 1999 about 70% of the reports diffused by analysts are concentrated on firms belonging to the first quartile of capitalization (these are roughly the firms that constitute the MIB 30 and the Midex) (The Midex currently includes the 25 largest firms in terms of capitalization after the ones included in the Mib 30, i.e. mid-cap firms). Bertoni, Giudici, Randone and Rorai (2003) find that analysts focus their attention on the post-IPO period and on large cap, the studies in the first quartile of capitalization is in fact more than a half of the whole sample. In Figure 4 it is possible to observe a certain degree of concentration in the number of reports. More than a

half of the studies considered in the sample is referred to less than 25% of the IPOs in the whole period.

It is also possible to consider the distribution of the reports with reference to the capitalization post-IPO. In the first year of quotation, the 16 firms belonging to the first quartile of capitalization received on average 14.4 reports against the lower level of 6.19 reports as the average of the firms in the fourth quartile, confirming the hypothesis that analysts cover those stocks that guarantee greater volumes of intermediation, neglecting ‘thin’, less liquid stocks (See Jegadeesh et al. (2002) for some considerations on the preferences of financial analysts for listed companies with large capitalization and high expected growth rates). The IPOs in the first quartile of capitalization post-IPO amount for about 40% of the total number of reports diffused in the first year of negotiation. The trend is also confirmed for the whole period of observation (see part E).



**Figure 4.** Concentration of reports diffused in the whole period and cumulative percentage of IPOs

**Part E. Distribution of the number of reports by quartile of capitalization**

Quartile of capitalisation	Whole period		1 <sup>st</sup> year of negotiation	
	Number of reports	Average number of report	Number of reports	Average number of report
Q1	402 (36.60)	25.12	230 (37.46)	14.37
Q2	282 (25.70)	17.62	151 (24.60)	9.437
Q3	245 (22.30)	15.31	134 (21.82)	8.37
Q4	170 (15.40)	10.62	99 (16.12)	6.187
Total	1,099		614	
Total (%)	(100)		(100)	

A further element to consider is the market share of subjects that produce and diffuse the reports. This industry presents a certain degree of concentration. In fact, in the first year of negotiation, 42 financial intermediaries have diffused studies; the ten more active intermediaries have produced about 73% of the studies in the period considered, confirming the influence that they can exercise on investors. The number of intermediaries issuing studies in the whole period of observation is instead 54, however in this case the ten more active intermediaries have

produce just the 61.5% of the total number of studies considered. In a time period of about 24 months from the IPO date, the intermediaries in the market of the studies increased of about 28% with respect to the first year of negotiation. This seems to confirm the hypothesis that when the firms are quoted, and therefore known by investors, then they become object of interests for the analysts that start to follow them with a periodical coverage (see Table 2, Part F).

**Part F. Concentration of the market shares**

	Number of studies in the whole period		Number of studies in the first year	
	Number	Percentage	Number	Percentage
First subject	121	9.08%	102	16.60%
First two subjects	237	21.56%	161	26.20%
First three subjects	329	29.93%	218	35.45%
First four subjects	415	37.76%	274	44.55%
First five subjects	476	43.31%	330	53.65%
First ten subjects	676	61.50%	449	73.00%
Remaining subjects	423	38.50%	165	27.00%
Total no. of subjects	54		42	
Total no. of studies	1099	100%	614	100%

**3. Distribution of recommendations**

To analyze the reliability of the price-sensitive information produced by financial analysts, and of the consequent market reaction, a first step consists in classifying the different types of recommendations. In the whole observation period, we have identified 15 types of recommendations (see Table 3, Part A). To measure the nature of the information produced, it is possible to aggregate together the different types in four fundamental categories. A second aggregation is also possible and may allow to further reduce the set of recommendations in two macro-categories:

‘negative’ and ‘non negative’ recommendations. In the post-IPO period, more than half of the reports is positive. This category is about the 57% of the whole sample of recommendations and can be divided in: ‘explicit’ buy reports (Buy 30%, Add 6%, Accumulate 3%), positive valuations (Positive 3%) and recommendations that are not ‘explicit’ buy but that indicate that the stock is outperforming the market (Outperform 15%). The ‘outperform’ recommendation can be ambiguous: in a bear market a stock can beat the market only for the reason that the benchmark is performing very poorly and not because of the quality of the stock itself. Also the category of ‘neutral’ recommendation is quite



significant: about 30% of the total (Hold 23%, Neutral 3%, Market Perform 3%). The percentage of 'negative' recommendations is instead small, 5% (Sell 2%, Reduce 2%, Negative 1%, Negative Short Term 3%, Underperform 1%). The residual category of 'Other Information' regards those reports without rating and various news or comments; only a 5% of the total regard this category.

Pooling together the first two categories, 'non negative' recommendations reach the 87% of the total number of reports produced by financial analysts.

This first result can be interpreted as an evidence of the optimistic (or at least not pessimistic) attitude of financial analysts regarding IPOs in the sample. A more interesting aspect is, however, to distinguish between 'independent' and 'non independent' analysts (see Table 3 – Part B).

An analyst is considered affiliated if she works for a financial intermediary that has participated to the IPO as a sponsor, global coordinator, specialist or lead underwriter. The unaffiliated (or independent) analysts, instead, work for financial intermediaries different from the above mentioned and that, therefore, have not participated to the listing. Non independent analysts display a greater aversion to produce negative recommendations, or they seem to be more optimistic than independent analysts. The former, in fact, have produced 'non negative' recommendations in about the 94% of the cases (positive 67%, neutral 27%) whereas the 'negative'

reports are 2%: 1% of 'sell' and another 1% of 'reduce'. Optimism or aversion to produce negative recommendations are also displayed by independent analyst, but on a lesser extent: 83% of 'non negative' recommendations (positive 51%, neutral 32%), against a 11% of 'negative' ones. The recommendations more diffuse by independent analysts are 'hold' (27%) and 'buy' (26%). One conclusion, coherent with previous studies, is a substantial homogeneity in financial analysts' recommendations, with a general evidence of a greater degree of optimism of non independent analysts that tend to give more favorable recommendations to the stock that the intermediary for which they work has taken public. This aversion of non independent analysts to produce negative recommendations is more pronounced in the first year of negotiation (see Table 3, Part C).

Negative recommendations are never issued in the short term, furthermore they are about 96% of the total while the 'buy' recommendations reach alone 42% of the total. With regard to independent analysts, it is possible to observe that both 'negative' and 'neutral' recommendations are greater in percentage than the same figures for non independent analysts: respectively the 11% and 31% against no 'negative' and 17% of 'neutral' recommendations.

This result seems at least to confirm that independent analysts are less optimistic or less averse to produce non positive recommendations.

**Table 3.** Types of recommendations

**Part A.** Distribution of the monographic studies produced in the whole period of observation

Types of recommendations	Number of studies in the whole period	Values (%)
Buy	331	30
Add	68	6
Accumulate	31	3
Positive	5	0
Positive Short Term	30	3
Outperform	160	15
<b>Positive Recommendations</b>	<b>625</b>	<b>57</b>
Hold	258	23
Neutral	37	3
Neutral Short Term	6	1
Market Perform	27	2
<b>Neutral Recommendations</b>	<b>328</b>	<b>30</b>
Sell	21	2
Reduce	27	2
Negative	6	1
Negative Short Term	28	3
Underperform	9	1
<b>Negative Recommendations</b>	<b>91</b>	<b>8</b>
<b>Other Information</b>	<b>55</b>	<b>5</b>
<b>Total</b>	<b>1099</b>	<b>100</b>

**Part B.** Type of recommendation divided by nature of the intermediary in the whole period of observation

Types of recommendations	Number of studies Non independent analysts	Tot (%)	Number of studies Independent analysts	Tot (%)
Buy	142	37	189	26
Add	31	8	37	5
Accumulate	10	3	21	3
Positive	1	0	4	0
Positive Short Term	0	0	30	4
Outperform	73	19	87	12
<i>Positive Recommendations</i>	<i>257</i>	<i>67</i>	<i>368</i>	<i>51</i>
Hold	74	19	184	27
Neutral	15	4	22	3
Neutral Short Term	0	0	6	0
Market Perform	12	3	14	2
<i>Neutral Recommendations</i>	<i>101</i>	<i>27</i>	<i>226</i>	<i>32</i>
Sell	4	1	17	2
Reduce	4	1	23	3
Negative	0	0	6	0
Negative Short Term	0	0	28	4
Underperform	0	0	9	1
<i>Negative Recommendations</i>	<i>8</i>	<i>2</i>	<i>83</i>	<i>11</i>
<i>Important Recommendations</i>	<i>15</i>	<i>4</i>	<i>40</i>	<i>6</i>
<i>Total</i>	<i>381</i>	<i>100</i>	<i>718</i>	<i>100</i>

**Part C.** Type of recommendation divided by nature of the intermediary in the first year of negotiation

Types of Recommendations	Non independent Analysts	Tot (%)	Independent Analysts	Tot (%)
Buy	89	42	130	32
Add	22	10	14	3
Accumulate	2	1	13	3
Positive	0	0	5	1
Positive Short Term	0	0	15	4
Outperform	54	26	35	9
<i>Positive Recommendations</i>	<i>167</i>	<i>79</i>	<i>212</i>	<i>53</i>
Hold	32	15	69	17
Neutral	2	1	47	12
Neutral Short Term	0	0	2	0
Market Perform	2	1	8	2
<i>Neutral Recommendations</i>	<i>36</i>	<i>17</i>	<i>126</i>	<i>31</i>
Sell	0	0	9	2
Reduce	0	0	8	2
Negative	0	0	9	0
Negative Short Term	0	0	21	5
Underperform	0	0	7	2
<i>Negative Recommendations</i>	<i>0</i>	<i>0</i>	<i>54</i>	<i>11</i>
<i>Important Recommendations</i>	<i>8</i>	<i>4</i>	<i>11</i>	<i>3</i>
<i>Total</i>	<i>211</i>	<i>100</i>	<i>403</i>	<i>100</i>

This kind of 'euphoria' or optimism displayed by analysts producing non negative recommendations on IPOs in the short run could be explained if IPOs are found to outperform the market. To test this kind of hypothesis we have to verify the existence of a positive correlation between the distribution of the recommendations and the performance of a portfolio of IPOs in the first year of quotation and in the whole period of observation.

To measure the performance of the IPOs in the sample we have used different methodologies on increasing periods of time (from 1 to 30 days). In particular, the first methodology is to consider 'Absolute Average Returns' (AAR), measuring the performance of the portfolio of IPOs without

adjusting for the market (see table 4, Part A and Graph 1), starting from the first day of negotiation. Even if AAR is a simple methodology, and it is often used to measure the underpricing and overpricing of IPOs in the short run, it is a useful indicator to verify in absolute terms the performance of the single stock and of the whole sample. To evaluate the long-run performance of the sample of IPOs, two methodologies have been used: the CAR (Cumulative Abnormal Return) approach, based on cumulative average abnormal return, adjusted for the market; and the Buy-and-Hold method, based on buy and hold returns (BHRs).

Graph 1 shows three series of AARs: for the IPOs quoted in the ‘Borsa’, in the ‘Nuovo Mercato’ and for the total of IPOs in the period 2000-2001.

Even if we could have data for 32 months (672 trading days), we decide to restrict our analysis on a time horizon of 28 months (588 trading days) since the number of IPOs in the sample, decreasing over time, still has an acceptable level of 32, while just after 28 months it reduces to 12.

The results are very interesting, highlighting the fact that, on average, the AARs for the IPOs depend on the market over which they are calculated. In particular, the AARs for the IPOs in the ‘Nuovo Mercato’ have had, in the long-run, the worst performance (-76.20%), while the best one (-

15.66%), even if negative, regards the IPOs on the ‘Borsa’. Clearly, the line representing the whole sample of IPOs is between these two extremes at -58.54%.

Part B of Table 4 shows the long-run performance of IPOs in terms of CARs (see also Graph 2). The CAR methodology (see table 4 – Part B – and Graph 2) is based on the hypothesis that periodical adjustments are made to divide the available wealth in equal parts between the  $n$  IPOs. In other words, this kind of strategy implies that, instead of passively maintaining the stocks in portfolio with the quantities initially held, the stock with the best performances are sold while the ones with the worst performances are bought.

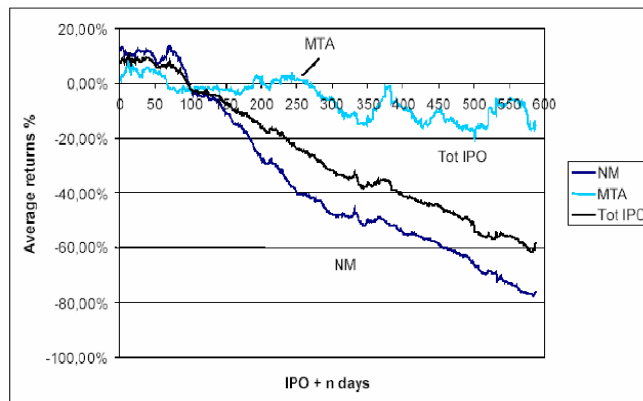
**Table 4.** Different measures of returns

**Part A.** Absolute Average Returns, not adjusted for the market

The sample includes 63 IPOs concluded between the 01/01/2000 and the 12/29/2001. The measure of absolute underpricing, not adjusted for any index, for every instant  $t$  is given by:  $U_{i,t} = Ln (P_{i,t}/P_{i,0})$ .  $P_{i,t}$  is the market price of stock  $i$  in the negotiation day  $t$ ;  $P_{i,0}$  is the issue price. The performance of the sample is given by the Absolute Average Returns in the period between the first day of quotation ( $q-1$ ) and the instant  $s$  (with  $s = 630$  days / 30 months). For every instant  $t$ , lying between  $q$  and  $s$ , the  $AAR_t$  are given by the average of the returns of the  $n$  stocks in the sample, with respect to the first day of quotation  $U_{i,t}$ :

$$AAR_t = \frac{1}{n} \sum_{i=1}^n U_{i,t}$$

The value of the  $AAR$  in the following table is expressed as percentages. In the column IPO +  $n$  days there is the period of time (starting from instant  $q =$  the day following the first day of quotation) on which has been calculated, for every  $t$ , the  $AAR$  (the period regards the measure of  $s$ ) where a month includes 21 trading days.



**Graph 1.** Absolute Average Returns for IPOs quoted in the ‘Borsa’ and in the ‘Nuovo Mercato’ not adjusted for the market in the period 2000-2001

For this reason the CAR methodology has been criticized since it is difficult to replicate it in practice, even because of the high related transaction

costs that it would imply. Furthermore, the cumulative structure of CAR leads to cumulate the estimation error.

**Part B.** Cumulative Abnormal Return adjusted for the market, using the general index Mib, for the IPOs quoted in the period 2000-2001

The sample includes 63 IPOs concluded between 01/01/2000 and 12/29/2001. The long-run performance of a portfolio of  $n$  IPOs (with  $n \leq 63$ ) is given by the Cumulative Average Return of the  $n$  stocks, calculated in the period between the first day of quotation ( $q-1$ ) and the instant  $s$  (with  $s = 630$  days / 30 months):

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

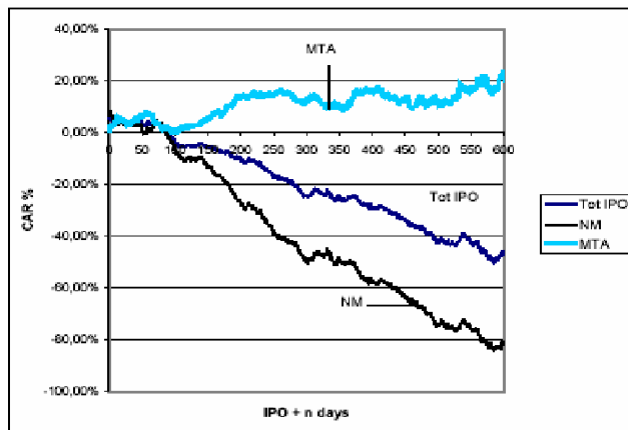
for every instant  $t$ , between  $q$  and  $s$ , the daily average returns  $AR_t$  are given by the average of the returns of the  $n$  stocks of the portfolio ( $ar_{i,t}$ )

where the  $ar_{i,t}$  are the daily returns of the stock  $i$  adjusted for the daily variation of the market index ( $I$ ):  $ar_{i,t} = r_{i,t} - r_{m,t}$ . The return of stock  $i$  at time  $t$  ( $r_{i,t}$ ) is determined by the natural logarithm of the ration between the price of stock  $i$  at time  $t$  and the price of the stock at time  $t-1$  [ $r_{i,t} = \ln(p_{i,t}/p_{i,t-1})$ ]; the same methodology is used to calculate the variation of the market index [ $r_{m,t} = \ln(I_t/I_{t-1})$ ]. The index  $I$  represents the MIB index. The CARs are expressed as percentages. In the column IPO +

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

$n$  days there is the period of time (starting from instant  $q$  = the day following the first day of quotation) on which has been calculated, for every  $t$ , the CARs ( the period regards the measure of  $s$ ) where a month includes 21 trading days.

IPO + n days	Month	No. of stocks	CAR of IPO Nuovo Mercato	CAR of IPO Borsa	CAR of IPO Total
1	-	63	8.47	0.65	5.26
21	1	63	3.54	4.61	3.98
42	2	63	3.40	5.48	4.25
63	3	63	1.09	6.77	3.42
84	4	63	2.00	1.32	1.72
105	5	63	-8.39	0.48	-4.76
126	6	63	-10.39	2.91	-4.89
147	7	63	-12.43	4.87	-5.34
168	8	63	-16.47	7.65	-6.59
189	9	63	-23.92	11.64	-9.35
210	10	63	-28.10	13.54	-11.03
231	11	63	-30.48	15.12	-11.78
252	12	63	-39.27	15.29	-17.03
273	13	58	-42.18	14.92	-18.92
294	14	58	-47.87	11.15	-23.88
315	15	58	-47.10	13.33	-22.58
336	16	57	-47.12	10.01	-23.86
357	17	53	-50.47	9.79	-26.04
378	18	49	-53.52	14.96	-26.34
399	19	47	-58.86	16.07	-28.23
420	20	46	-57.95	14.01	-29.66
441	21	45	-60.81	11.07	-32.54
462	22	45	-64.69	9.87	-35.64
483	23	45	-69.77	11.22	-38.87
504	24	40	-73.02	12.05	-40.82
525	25	33	-76.02	13.92	-42.99
546	26	32	-73.82	16.11	-40.79
567	27	32	-80.63	19.00	-46.34
588	28	32	-83.19	17.59	-49.05
609	29	12	-81.54	20.39	-46.96
630	30	7	-75.86	4.52	-44.14
651	31	6	-65.60	-	-96.68
672	32	2	-20.25	-	-55.25



**Graph 2.** CAR of the IPOs quoted in the Borsa and in the Nuovo Mercato adjusted for the market, using the general market index Mib in the period 2000-2001

Graph 2 shows three series of CARs: for the IPOs quoted in the 'Borsa', in the 'Nuovo Mercato' and for the total of IPOs in the period 2000-2001.

Using the time horizon of 28 months, the results of the CARs confirm those found for the AARs, in terms of order of long-run performances. The long-

run performance of the IPOs in the 'Nuovo Mercato' is the worst (-83.19%), the best, and positive, are those in the 'Borsa' (+17.59%), the total of IPOs reach the level of - 49.05%.

**Part C.** Buy-and-Hold returns adjusted for the market, using the general market index Mib, of the IPOs quoted in the period 2000-2001

The sample includes 63 IPOs concluded between the 1<sup>st</sup> January 2000 and the 29<sup>th</sup> December 2001. The long-run performance of a portfolio of  $n$  IPOs (with  $n \leq 63$ ) is given by the Buy-and-Hold Return of the  $n$  stocks, calculated in the period between the first day of quotation ( $q-1$ ) and the instant  $s$  (with  $s = 630$  days / 30 months):

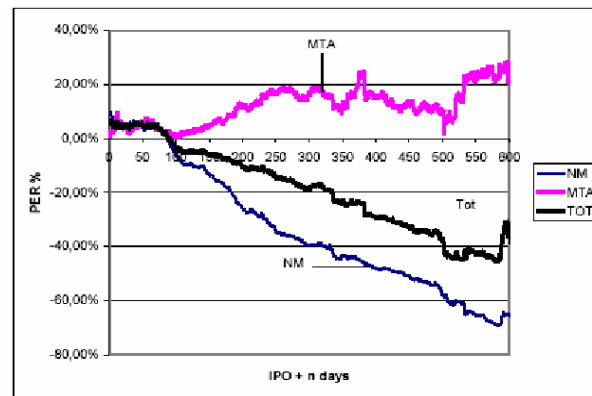
$$BHR_{i,t} = \left[ \prod_{t=q}^s (1 + r_{i,t}) - \prod_{t=q}^s (1 + r_{m,t}) \right]$$

The average excess return for every period,  $PER_t$  (Portfolio Excess Return), is the average of  $BHR_i$ ;  $n$  is the number of stocks on which  $PER$  is calculated. The return of stock  $i$  at time  $t$  ( $r_{i,t}$ ) is determined by the natural logarithm of the ration between the price of stock  $i$  at time  $t$  and the price of the stock at time  $t-1$  [ $r_{i,t} = \ln(p_{i,t}/p_{i,t-1})$ ]; the same methodology is used to calculate the variation of the market index [ $r_{m,t} = \ln(I_t/I_{t-1})$ ]. The index  $I$  represents the MIB index. The PERs are expressed as percentages. In the column IPO +  $n$  days there is the period of time (starting from instant  $q =$  the

$$PER_t = \frac{1}{n} \left( \sum_{i=1}^n BHR_{i,t} \right)$$

day following the first day of quotation) on which has been calculated, for every  $t$ , the PERs ( the period regards the measure of  $s$ ) where a month includes 21 trading days.

IPO + n days	Month	No. of stock	PER of IPO Nuovo Mercato	PER of IPO Borsa	PER of IPO Total
1	-	63	9.27	0.65	5.74
21	1	63	3.29	4.53	3.80
42	2	63	6.23	4.82	5.66
63	3	63	3.97	6.37	4.96
84	4	63	1.47	1.89	1.65
105	5	63	-7.58	0.48	-4.28
126	6	63	-10.03	3.03	-4.68
147	7	63	-12.60	3.99	-5.80
168	8	63	-16.14	6.39	-6.91
189	9	63	-22.04	9.29	-9.20
210	10	63	-27.06	10.44	-11.69
231	11	63	-28.45	16.36	-10.52
252	12	63	-34.90	17.48	-14.49
273	13	60	-36.10	17.73	-15.68
294	14	60	-38.98	14.42	-18.78
315	15	58	-39.38	18.36	-17.48
336	16	57	-42.58	11.07	-22.46
357	17	53	-44.09	11.34	-24.90
378	18	49	-45.29	22.56	-24.09
399	19	47	-47.77	15.50	-28.92
420	20	46	-48.81	12.83	-30.05
441	21	45	-49.90	11.26	-32.23
462	22	45	-51.91	9.64	-34.13
483	23	45	-54.20	10.42	-35.53
504	24	40	-58.08	7.23	-42.19
525	25	33	-60.51	16.40	-44.51
546	26	32	-64.52	23.46	-41.71
567	27	32	-67.38	23.31	-43.89
588	28	32	-67.78	26.46	-40.29
609	29	12	-64.92	60.57	-42.11
630	30	7	-63.09	-55.98	-62.07
651	31	6	-73.34	-	-73.34
672	32	2	-80.69	-	-80.69



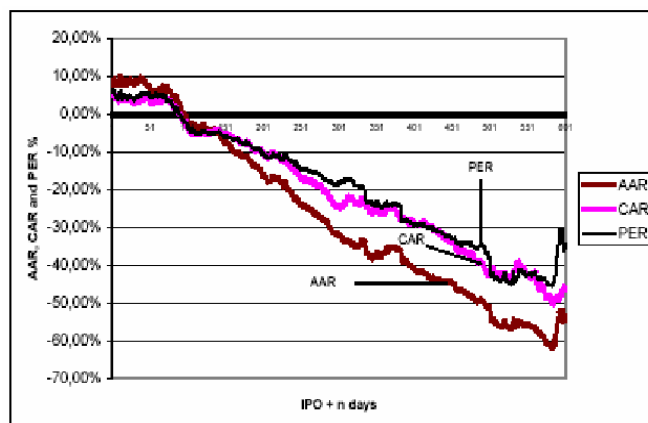
**Graph 3.** PER of the IPOs quoted in the ‘Borsa’ and in the ‘Nuovo Mercato’ adjusted for the general market index in the period 2000-2001

To ameliorate the drawbacks associated with the CAR methodology, an alternative method have been proposed to measure the long-run performance. This method, called Buy-and-Hold, presents the advantage of showing the result achievable ‘in practice’ by an investor that, in a certain moment, would invest the same amount of money in the stocks of the sample and liquidate this sum in the precise instant in which the periodical return is measured (see table 4 – Part C – and Graph 3). Both for CARs and BHRs, the analysis has been performed using as a benchmark for the market the MIB index. Part C of Table 4 presents the long-run performance of IPOs in terms of BHRs (see also Graph 3). The results found using the BHR methodology and calculating the Portfolio Excess Returns (PER) are similar to the ones obtained above, in terms of the order in the long-run performances: - 67.78% for the IPOs in the ‘Nuovo Mercato’, +26.46% in the Borsa and - 40.29% in total.

Graph 3 shows three series of PERs: for the IPOs quoted in the ‘Borsa’, in the ‘Nuovo Mercato’ and for the total of IPOs in the period 2000-2001.

Graph 4 compares the three series of long-run average returns for the sample of 63 IPOs in the period 2000-2001: the AAR, not adjusted for any index, the CAR and the BHR, both adjusted using the Mib index. The AAR, being not adjusted, gives the worst performance, while CAR and BHR give similar results. The analysis performed so far highlights that the attitude to produce positive recommendations is not significantly related to the performance in the period considered. In fact, the distribution of ratings shows the prevalence of positive recommendations in all the periods taken in consideration, even in bear markets. This result appears to be quite robust since it holds using different methodologies based on absolute or risk-adjusted measures of returns.

Apart from the optimism of financial analysts, this result seems to imply that the activity of research coverage can be used as a tool for booster-shooting operations, i.e. the support of the price of poor performing stocks. This last phenomenon appears to be more observable for non independent analysts.



**Graph 4.** AAR, CAR and PER of the sample of IPOs quoted in the ‘Borsa’ and in the ‘Nuovo Mercato’ in the period 2000-2001

## 2. Market Reaction to Recommendations differentiated by underwriting relationship

The conclusive step of our analysis consists in verifying the market reaction to the recommendations produced by the analysts. We want, in this case, to measure the degree of reliability of the information produced by the analysts using the long-run performance of the IPOs of our sample. The subset of information used is the vector that has as elements the reports diffused by analysts in the first year of negotiation (615 observations).

In this period we considered only the first recommendation and eventual changes in the series of recommendation, while the simple reiteration of a rating was not taken into consideration as an 'event'.

The 'event' is defined as the issue of the recommendation. The market reaction to the events should allow us to verify if the investors react in a different way to reports produced by independent or not independent analyst. The IPOs in the period 2000-2001 are thus aggregated in four main categories: (1) IPOs that have received buy recommendations only by non independent analysts (17 firms); (2) IPOs that have received buy recommendations only by independent analysts (9 firms); (3) IPOs that have received buy recommendations both by independent and non independent analysts (26 firms); (4) IPOs that have not received any buy recommendation (10 firms). The analysis of long-run performance allows identifying if there is a bias in the report of non independent analysts, i.e. if they are affected by

errors. Following the theory of efficient markets, if non independent analysts have better information that are not yet included in the stock prices, then those stocks should, in case of a buy recommendation, perform better than stock recommended by independent analysts.

To measure the performance of the sub-samples of IPOs considered above, two approaches have been used. The first measures CAR and BHR adjusted for the market using the MIB index for all the IPOs, while the second calculates CAR and BHR adjusted using the MIB index for the IPOs quoted in the ordinary segment of the Italian Stock Exchange, and the NUMTEL index for the IPOs quoted in the Nuovo Mercato. The main results are showed in what follows.

The data contained in table 5 represents the core results of the paper. The results are impressive: after 28 months, there is about a 56% difference between the long-run performances of IPOs recommended by non independent analysts (-73.93%) and independent analysts (-17.48%). After one and two years, the differences are still important: almost 35% in the first case, and more than 45% in the second. This result is very important since it implies that the market recognize, at least in the run, that affiliated analysts are overly optimistic or in conflict of interests. Even if we expected a difference in the performance of affiliated and independent analysts the results were quite surprising, therefore other measures of long-run performance were used to test the robustness of our results.

**Table 5.** Distribution of IPOs by underwriter relationship

**Part A.** CAR adjusted for the market, using the general index Mib, for IPOs in the period 2000-2001 divided by underwriter relationship

The sample includes 63 IPOs, concluded between the 1<sup>st</sup> January 2000 and the 29<sup>th</sup> December 2001. For each IPO we consider the recommendation diffused by brokerage analysts during the first year of negotiation (615 observations). Each firm has been classified by the underwriter relationship. We define underwriters banks that participated to the IPO as a sponsor, global coordinator or lead manager.

We define non underwriter those intermediaries that do not participated to the IPO in the terms above mentioned. With the expression 'buy' recommendation we intend explicit suggestions to buy the stock (buy, add or accumulate). With the expression 'no buy recommendation' we intend all the recommendations that are not an implicit buy suggestion (hold, neutral, marketperform, sell, reduce, underperform, negative short term, etc.). For each category of firms, the long-run performance of a sub-portfolio formed by  $n_j$  IPO (with  $j=1,2,3,4$  and with  $n_1 \leq 17$ ,  $n_2 \leq 9$ ,  $n_3 \leq 26$  e  $n_4 \leq 10$ ), is given by the cumulative average returns of the  $n_j$  stocks calculated in the period from the first day of quotation ( $q-1$ ) to the instant  $s$  (with  $s = 630$  days/30 months):

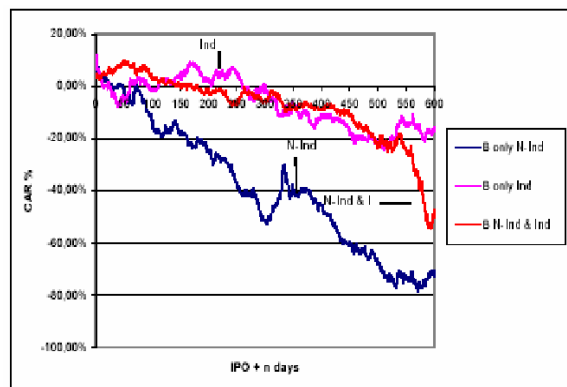
for every instant  $t$ , between  $q$  and  $s$ , the daily average returns  $AR_{j,t}$  are given by the average of the returns of the  $n_j$  stocks included in the sub-portfolios ( $ar_{i,t}$ )

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

$$AR_{j,t} = \frac{1}{n_j} \sum_{i=1}^{n_j} ar_{i,t} \quad \text{with } j = 1,2,3,4$$

where the  $ar_{i,t}$  are the daily returns of the stock  $i$  adjusted for the daily variation of the market index as earlier described.

IPO + n days	Month	CAR of IPO with BUY from non independent $n_1 = 17$	CAR of IPO with BUY from independent $n_2 = 9$	CAR of IPO with BUY from both $n_3 = 26$	CAR of IPO with no BUY recommendation $n_4 = 10$
1	-	3.14	11.53	3.94	10.60
21	1	1.93	-0.73	5.55	12.30
42	2	0.84	-7.75	7.75	10.34
63	3	-6.60	1.45	7.89	8.47
84	4	-5.17	1.86	6.99	1.21
105	5	-16.54	-1.02	3.38	-8.52
126	6	-17.39	3.00	1.20	-5.83
147	7	-17.61	3.52	0.87	-7.84
168	8	-21.94	8.41	0.55	-11.91
189	9	-21.93	3.42	-2.01	-19.24
210	10	-28.46	3.86	-2.09	-16.80
231	11	-28.21	4.21	-2.45	-22.81
252	12	-38.86	4.39	-6.00	-28.57
273	13	-41.16	-4.90	-2.45	-37.73
294	14	-51.18	-0.35	-5.51	-46.87
315	15	-47.31	-5.61	-2.78	-46.52
336	16	-33.51	-8.27	-9.26	-55.52
357	17	-41.35	-9.26	-8.20	-58.86
378	18	-40.79	-12.83	-7.69	-58.34
399	19	-45.53	-11.06	-8.80	-61.63
420	20	-52.55	-13.28	-8.22	-60.27
441	21	-59.01	-14.53	-10.78	-61.13
462	22	-60.68	-19.74	-14.53	-64.33
483	23	-65.88	-19.70	-17.03	-68.33
504	24	-68.41	-22.47	-19.39	-67.84
525	25	-73.67	-19.12	-24.57	-64.65
546	26	-71.87	-13.63	-23.26	-64.13
567	27	-76.21	-15.38	-33.84	-68.41
588	28	-73.93	-17.48	-50.55	-63.82
609	29	-65.01	-19.83	-52.32	-60.79
630	30	-75.71	-11.39	-49.78	-60.05



**Graph 5.** CAR adjusted for the market, using the general index Mib, for IPOs in the period 2000-2001 differentiated by underwriting relationship

In Part B of Table 5 we used the BHR methodology, obtaining similar results. The difference is still important, both at one year (almost

the 30%) and two years (more than 39%), and after 28 months reach 60%.

**Part B.** BHR adjusted for the general market index of the IPOs in the period 2000-2001 differentiated by underwriting relationship

The sample description is the same as part A, while the methodology used here is *Buy-and-Hold*:

$$BHR_{j,t} = \left[ \frac{1}{n_j} \sum_{i=1}^{n_j} \prod_{t=q}^s (1 + ar_{i,t}) \right] - 1 \quad \text{with } j = 1,2,3,4$$

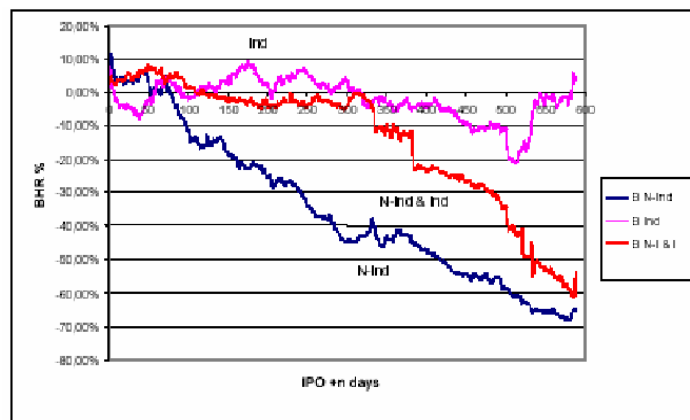


IPO + n days	Month	CAR of IPO with BUY from <i>non independent</i> $n_1 = 17$	CAR of IPO with BUY from <i>independent</i> $n_2 = 9$	CAR of IPO with BUY from <i>both</i> $n_3 = 26$	CAR of IPO with no BUY recommendation $n_4 = 10$
1	-	3.67	7.47	4.21	12.62
21	1	2.95	-5.08	4.75	13.17
42	2	6.20	-6.58	6.13	15.23
63	3	0.17	2.81	6.11	12.25
84	4	-3.75	1.90	5.37	3.56
105	5	-13.45	-1.38	0.33	-4.41
126	6	-15.69	3.02	-2.83	-0.53
147	7	-17.50	2.99	-4.39	-1.71
168	8	-21.75	7.25	-4.74	-5.25
189	9	-22.53	3.94	-7.23	-10.47
210	10	-27.62	1.71	-8.04	-13.87
231	11	-26.87	5.22	-6.18	-19.25
252	12	-34.23	4.91	-10.01	-23.69
273	13	-37.05	0.92	-8.57	-26.42
294	14	-44.23	3.19	-10.66	30.43
315	15	-43.83	0.19	-8.20	-29.80
336	16	-41.24	-1.93	-19.50	-33.39
357	17	-43.71	-4.17	-22.60	-36.42
378	18	-43.21	-4.28	-23.84	-34.69
399	19	-46.67	-3.74	-23.17	-38.05
420	20	-50.47	-5.59	-23.72	-37.07
441	21	-53.83	-8.02	-26.04	-36.78
462	22	-54.26	-10.97	-28.05	-39.33
483	23	-56.76	-9.67	-30.55	-40.14
504	24	-58.63	-19.56	-41.05	-40.96
525	25	-62.61	-15.64	-49.47	-41.56
546	26	-65.21	-0.93	-52.05	-42.83
567	27	-66.75	-3.44	-56.25	-43.35
588	28	-64.71	4.66	-53.52	-45.74
609	29	-41.30	-5.84	-71.16	-71.87
630	30	-47.90	-57.14	-81.59	-71.42

The two methodologies used to measure the long-run performances of the IPOs confirm the intuition underlying the hypothesis that non independent analysts have an incentive to recommend the firms that are taken public by the financial intermediary for which they work, often irrespectively of the quality of the firm. In other words, there can be a substantial conflict of interest between the responsibility of the analyst towards her investors and the incentive to produce positive

recommendation on the firms quoted by the intermediary for which she works.

The sanction of the market in terms of long-term performance is quite evident and significant if we observe table 6, where we verify the statistical significance of the mean differences between underwriter and non-underwriter analysts, finding that they are highly significant both using CARs or BHRs.



**Graph 6.** BHR adjusted for the general market index of the IPOs in the period 2000-2001 differentiated by underwriting relationship

Table 6. Non-Independent and Independent analysts comparisons.

IPO + n days	Month	Mean differences between Non-Independent and Independent only			
		Mean $\Delta$ CAR%	t-Stat	Mean $\Delta$ BHR%	t-Stat
7	-	-0,22%	-0,0798	6,10%	2,2637 **
21	1	2,66%	0,7550	8,04%	2,3172 **
126	6	-20,39%	-2,5086 **	-18,71%	-2,3715 **
252	12	-43,25%	-3,5702 ***	-39,13%	-3,3009 ***
378	18	-27,96%	-2,4453 **	-38,93%	-3,6069 ***
504	24	-45,94%	-1,8224 *	-39,06%	-1,8483 *
588	28	-56,45%	-2,1338 *	-69,37%	-1,9877 *

Statistically significant \* = 10%, \*\* = 5%, \*\*\* = 1%

Firms that have received positive reports only by non independent analysts have the worst long-run performance, even if compared with firms that do not receive any buy recommendation in the first year of negotiation. Another clear evidence of the hypothesis of conflict of interest is the better performance of IPOs only recommended by independent analysts.

The market reaction seems therefore to be based not on the evidence of the different quality of the analysts (i.e. the 'superior information' hypothesis) but on the status of independence of the analyst.

It remains to be ascertained if the lack of credibility of the non independent analyst is due to overconfidence or over-optimism of these analysts or just to the potential conflict of interest.

#### 4. Conclusion

The purpose of this paper was the study of analyst recommendations of IPOs to test two different hypothesis: the 'superior information hypothesis' and the 'conflict of interest hypothesis'. The first affirms that underwriter analysts have superior information about the firms they have taken public, acquired through the due diligence process. If this is true, then their recommendations should be more accurate than those issued by independent analysts and therefore the long-run performance of the IPOs recommended by underwriter analysts should be better than the performance of firms recommended by independent analysts. The empirical evidence that we found shows the contrary and is consistent with the hypothesis of conflict of interest, i.e. that affiliated analysts have a strong incentive to issue positive rating for firms that their bank has taken public. The conflict of interest is between the responsibility towards their clients and the incentive to operate in line with the bank interests.

The post-IPO long-run performance is significantly worse for firms that were recommended by underwriter analysts than the performance of firms recommended by independent analysts. The

market reaction seems therefore to be different, depending on the nature of the underwriter relationship.

To conclude, it is possible to argue that the empirical evidence that we found is consistent with the conflict of interest hypothesis, but not with the one based on superior information. Potential improvements in corporate governance regulation both for the broker-side and the firm-side could probably reduce in the future conflicting behaviors of analysts and managers.

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