THE EFFICIENCY OF THE ITALIAN STOCK EXCHANGE: MARKET REACTION FOLLOWING CHANGES IN RECOMMENDATIONS

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Abstract

The main objective of this paper is to examine the market reaction to the recommendation changes issued by financial analysts. We study the peculiar case of Italy where analysts have to send their reports to the Stock Exchange Commission and the Stock Exchange the same day they give it to their clients. Reports are available on the Stock Exchange website. Our dataset includes about 5,200 reports issued on the 117 IPO firms that went public on the Italian Stock market between 1st January 1998 and 31st December 2003. We calculate abnormal returns and abnormal volumes associated with the dissemination of the reports and perform two short-term event studies: the first associated with the "report date", i.e. the date in which the analyst gives the report to private clients; the second one with regard to the "public access date", i.e. when the report is freely and publicly available on the Stock Exchange website. At the report date we find average abnormal returns of 1.01% for upgrades, and of –0.92% for downgrades, both statistically significant. We also find abnormal returns the day before the report date. This can be the effect of other news affecting prices, or the violation of Italian regulation. The impact of recommendations changes is also analyzed in a three days event window [-1; +1], a pre-event [-15; -2] and a post-event window [+2; +15]. While at the report date the average abnormal return is slightly larger for upgrades, in the three event window downgrades have an higher impact (CAR= –2.06%) than upgrades (CAR= 1.89%), coherent with the previous literature. While there is no effect in the pre-event window, we find in the post-event window a CAR of 1.16% for upgrades and of –1.29% for downgrades, both statistically significant, even if daily average abnormal returns are not statistically significant. We find abnormal volumes both in the three-days event window and some days before the report date, both for upgrades and downgrades. The event study related to the public access date show very different results. We do not find statistically significant average abnormal returns around this date, indicating that the market efficiently does not react to the mere publication of the report on the Stock Exchange website, since prices already included the effect of the recommendation change at the report date, i.e. when the new information was given to analyst's private clients. It remains to be investigated if the abnormal returns before the report date are due to the effect of news different from the recommendation change or if they show a violation of the Italian regulation.

Keywords: analysts, recommendation changes, market efficiency, short-term event study

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1. Introduction

The degree of efficiency in a stock market can be assessed in different ways. In the finance literature, event study analysis is one of the most used techniques since it allows to measure the market reaction following a particular event.

In this paper we investigate market efficiency studying the reaction to changes in analysts' recommendations. If there is an upgrade in the rating assigned to a firm we should expect positive market reactions both in terms of abnormal returns and extra-volumes, while in case of downgrade, while we could expect abnormal volumes, we should also record negative extra-returns.

Brokerage analysts are professionals that give recommendations to investors, thus reducing the asymmetric information existing between the average investor and the management of listed companies.

There is a huge amount of studies in the literature focusing on the role of these professionals, but they almost totally are on the US case, with few exceptions regarding cross-country analysis worldwide or regarding European countries. One example is Jegadeesh and Kim (2003) that however found that Italy seems to be a particular case, since they do not find any reaction to recommendations changes.

In this paper, we claim that the evidence regarding Italy is basically wrong, since it is based on commercial databases like I/B/E/S that however are biased.

One of the main contribution of this paper is that we have constructed our own database that includes about 5,200 reports issued on 117 Initial Public Offering (IPOs from now on) that went public between the 1st January 1998 and the 31st December 2003.

The Italian case is peculiar since its regulatory system imposes to analysts to transmit the reports to the Italian Securities and Exchange Commission (the Consob) and deposit them to Borsa Italiana S.p.A.,the managing company of the Italian Stock Exchange, on the same day in which the reports are available to their private clients.

To evaluate the market reaction we calculate both extra-returns and abnormal volumes deriving from recommendation changes.

We perform two separate short term event studies taking using two different event dates: the first is the moment in which the report is given to the private clients of the analyst, while the second refers to the moment in which the report is published in the Stock Exchange website.

We verify the efficient market hypothesis for which investors should react in correspondence of the report date, but not after the publication date since the information has already been incorporated in the prices through the transactions of the analyst' private clients. If no value is included in the report, then the research activity of the analyst is worthless, and investors should not adjust their portfolios in response to that. If, instead the report has some value, then we should observe abnormal returns and abnormal volumes.

If the market is informationally efficient, instead, these abnormal volumes and abnormal returns should last for a very short period of time and then disappear. When the report becomes publicly available, the informational content should be already incorporated into the market, therefore we should not observe any abnormal volume or return.

During IPOs the problem of asymmetric information between the management of the companies going public and investors is highest, since most of the IPO-firms are relatively unknown by investors. Since the cost of gathering information in these cases can be very high for the average investor, then the work of analysts is highly valuable.

The results obtained show an average abnormal return of 1.01% for upgrades and of –0.92% for downgrades. We find a market reaction also the day before the report date. It is possible that price sensitive information are disseminated before the recommendation change, however, an alternative explanation can be proposed: analysts give the information to their private clients before the report date in which they should transmit the report to the Consob and deposit it to the Stock Exchange. This would signify a violation of the regulation in force.

The impact of a recommendation change is also calculated using Cumulative Abnormal Returns (CAR) on different periods. The first one includes the three days around the event date [-1 ; +1], the second time window instead includes the fourteen days preceding this date [-15 ; -2], while the third one the fourteen days following the event date [+2; +15]. While at the report date the average abnormal returns are greater for upgrades than for downgrades, the CAR on the three days window around the event date is 1. 89% for upgrades and –2.06% for downgrades, in line with previous results found in literature.

We do not find any significant effect in the fourteen days preceding the three days event window, while in the subsequent ones we show a CAR of 1.16% for upgrades and of –1.29% for downgrades, both statistically significant, even if the average abnormal returns are not significantly different from zero.

The results show that abnormal volumes beginning some days before the event window both for upgrades and downgrades. We do not find, instead, any effect in correspondence of the publication of report on the Stock Exchange website.

It remains to be investigated the reason of a market reaction before the report date, i.e. if there are relevant information before that date or if a violation of the Italian regulation occurs.

The structure of the paper is the following: the second paragraph presents a survey of the literature; the third paragraph explains the methodology applied and the database used; the fourth paragraph comments the results obtained and concludes.

2. Survey of the literature

The literature on analysts is really wide, ranging from studies on earning forecasts to market reaction to changes of target prices, earnings estimates or recommendations. With regard to this last field, we can highlight several empirical evidences from previous studies.

With reference to the US stock market, Womack (1996) has analyzed 1,573 recommendation changes issued between 1989 and 1991 on 822 companies. The study uses the First Call database, finding that firms subject to recommendation changes record large abnormal returns on their stocks. While this happens in the short run, in the post-event period, for buy recommendation there is a mean post-event drift, but short-lived (one month), whereas for sell recommendation is larger and lasting for six months. The asymmetry between buy and sell recommendations can be explained with the higher frequency with which analysts issue upgrades and with the greater cost of issuing a negative ratings.

The post-event drifts contrast with the efficient market hypothesis since the information contained in the report is not immediately incorporated in stock prices. In correspondence of the diffusion of the report, Womack calculates a coefficient of abnormal volumes: on average, recommendations that add a stock to the buy list induce abnormal volumes of 190% while recommendations that add a stock to the sell list induce abnormal volumes of 300%. Analysts seems good in the activities of stock picking and market timing, however they mostly issue positive recommendations (the proportion of buy to sell is 7 to 1) and mainly focus on bigger companies.

Of course, it is worth to control if the reports are followed or preceded by the diffusion of price sensitive information from the issuing companies, as Juergens (1999) does measuring the value of the recommendations formulated by analysts. His analysis confirms that analysts recommendation have high informative value. What is also important, however, is to identify what firms' events are able to determine relevant price and quantity changes. In this respect, Taffler and Ryan (2002) consider all the information that can affect a company, including the anticipation or leakage of information before the diffusion to the public. The result is that while 65% of the changes in prices and volumes can be explained by publicly available information, Analysts' recommendations and earnings forecasts not associated with the diffusion of other news prevail on all other categories in terms of relevant market reactions.

In a more recent paper, Barber, Lehavy, McNichols and Trueman (2003) show that stocks upgraded by brokerage firms with the lowest percentage of buy recommendations record better returns with respect to stocks upgraded by brokerage firms that have an higher percentage of buy recommendations. The opposite occurs for downgrades.

With regard to cross-country analyses, Jegadeesh and Kim (2003) compared recommendations issued by analysts in the G7 countries between 1993 and 2002, evaluating their investment value. The authors, analyze different investment strategies consisting in buying stocks that have been upgraded and in selling stocks that have been downgraded. Their evidence shows that stock prices react significantly the day of the recommendation change and the following one. This reaction occurs in all the countries except from Italy.

The case of Italy is investigated in Belcredi, Bozzi and Rigamonti (2003) that perform a study similar to Womack (1996). They analyze about 4,990 reports, published on the Italian Stock Exchange website between September 1999 and March 2002 issued by 56 brokerage firms on 237 listed companies. The study considers 659 changes of recommendation and documents abnormal returns and extra-volumes both for upgrade and downgrades in a three-days event window centered around the report date.

Our analysis is different in that not only considers more reports, about 5,200, but if focuses on IPOs, where the asymmetric information problem is higher, and on a greater number of firms, 117, that went public on a wider period of time, from the 1st January 1998 and the 31st December 2003.

3. Market reaction following changes in recommendations

3.1 Descriptive analysis of the sample and rating systems

The reports on the IPOs are available on Borsa Italiana website and were issued since the 9th September 1999.

The Italian securities regulation imposes several duties on brokerage analysts. In fact, article 69 of the Consob Regulation no. 11971 of 14th May 1999 provides that issuers of financial products, authorized brokerage firms and institutions that have ownership relationships with them, are obliged to transmit to Consob and to deposit to Borsa Italiana S.p.A. all the "studies and statistics" that they disseminate to the general public, on the same day of dissemination. If the reports are only for the issuing firm's shareholders, or of a firm that has a control relation with it, or again for the brokerage firm's clients, then the deposit to the Stock Exchange can be delayed. The maximum number of days of delay in depositing reports to the Stock Exchange changed over time: until the 12th June 1999 it was 15 days, than passed to 10 days until the 16th June 2001, to arrive at the current provision of 60 days.

It should be highlighted that the reports have to be analyzed manually one by one, being not homogeneous, representing a rather time consuming procedure.

We have performed a careful analysis of the sample, eliminating double reports or reports lacking the recommendation or other fundamental information, so that the final sample contained 4,663 reports issued by 56 brokerage firms.

The greater part of the sample is from the Ordinary Segment of the Italian Stock Exchange (53 out of 117, the 45% of the total). Several companies (44 out of 117, the 38% of the total of IPOs) are included in the Nuovo Mercato, the High-Tech segment of the Italian Stock Exchange.

In appendices 1 and 2 we give more deZtails and summary tables on firms and brokerage houses considered.

Eight of the first ten companies with the greatest number of reports received on average per year are also in the first ten largest companies for capitalization. This result seems to support the hypothesis of a greater attention of the analysts to the so-called “glamour stocks”, i.e. the empirical evidence of a positive correlation between the average number of reports and the size (measured by post-offering capitalization) already shown in previous researches.

Classifying the raccomandations, it is possible to see how different analysts use different rating systems.

A rating system is a tool that analysts use to propose their recommendations. While the most simple rating system consists of a three-points scale (buy, hold, sell), perhaps the most used by analysts is the five-points scale system, with outperform and under-perform as intermediate ratings. It is, however, possible to have other rating systems with a different number of classes (six or eight for example) or even numerical systems. Recommendations can be formulated depending on the expected differential in performance between the stock’s total return and a reference index. It is however unavoidable a certain degree of subjectivity in realizing a rating system that pretends to be representative of the recommendations.

We classify the recommendation using a five-points scale, in line with previous studies in the literature, but non yet used, to the best of our knowledge, in Italy. In this respect, this represents a contribution to the literature.

Furthermore, it is possible to see that the rating systems are not homogeneous, so it is important to pay attention while comparing similar recommendations issued by different analysts. In other words, the buy recommendation given by a specific analyst can be his/her highest valuation, or can follow a “strong buy” and correspond to an “outperform” of another analyst.

We want to highlight the presence of 153 studies that show recommendations that do not fit in our rating system, or that do not contain any recommendation. In some cases the analyst simply does not formulate a recommendation and procrastinate.

3.1.1 The matrix of recommendation changes

After defining the rating systems, we have to construct the so-called matrix of recommendation changes.

There are two fundamental reasons to analyze recommendation changes instead of the series of recommendations itself [Stickel (1995)].

The first one is that an informational efficient market should react to new information, and not to the reiteration of past information. The second is that analysts’ recommendations are subject to “*calendar clustering*” since they are quite often issued in response to the publication of periodical financial reports from the companies, or after important announcements. To analyze the recommendation changes we have considered only those reports that contained the current and previous rating.

Table 3 proposes a summary of the recommendation changes, highlighting the percentages of recommendations unchanged, upgraded or downgrades. It is worth noting that the percentage of upgrades is less than the percentage of downgrades.

Brokerage analysts tend to revise with greater frequency their recommendations downward rather than upward.

This result is in contrast to what found in previous works. However, it can probably be explained if we consider the period in which the reports were issued (end of 1999 through 2003).

In correspondence with one of the greatest bear markets of all times (2000-2001), the greater presence of downgrades than upgrades is consistent with the phenomenon knows as “optimism bias” of financial analysts [O’Brien (1998)] claiming that analysts tend to be excessively optimistic in their initial forecasts and only with some delay and gradually they revise their recommendations.

Table 3. Changes of recommendation – Summary

Recommendation	Number of reports	(%)
Unchanged	2,878	78.31%
Upgrade	264	7.18%
Downgrade	380	10.34%
Other recommendations	153	4.16%
Total	3,675	100%

Once analysts revise their initial optimistic estimates, the number of downgrades becomes greater than the one of upgrades.

Table 4 presents the matrix of changes of recommendations in more details.

Table 4. Matrix of changes of recommendation

		Current Rating					
		buy	o.p.	hold	u.p.	sell	Total
Previous Rating	buy	961	67	93	3	9	1,133
	o.p.	48	655	108	10	7	828
	hold	52	94	1,014	19	61	1,240
	u.p.	2	6	21	68	3	100
	sell	7	4	27	3	180	221
	Total	1,070	826	1,263	103	260	3,522

Reports containing first recommendation changes from each brokerage firm on the sample of firms considered are 404 (249 downgrades; 155 upgrades). On average, the first downgrade is issued 802 days after the date of the IPO, while the first upgrade after 738 days. The first downgrade in absolute terms has been issued 74 days after the IPO. The first downgrade that has been issued more far from the date of the IPO has been issued after 1,959 days. The first upgrade in absolute terms has been issued after 62 days from the IPO. The first upgrade, that has been issued more, has been issued after 1,686 days. Analyzing the trend of upgrades and downgrades it is possible to see that, on average, analysts are faster in issuing upgrades than downgrades testifying an "excessive optimism" on the stocks that they cover. In other words, it seems that they would need less time to upgrade their recommendations since they trust on the fundamentals of the company; for the same reason, in case of poor income perspectives, they should be more reluctant to issue a downgrade and should take more caution in downgrading their recommendation. However, it is also possible to claim that the greater celerity with which analysts issue positive rather than negative recommendations can be related to a prior access to positive news and a delayed access for negative ones.

This explanation is coherent with the evidence found, among others, by Brown (2001), showing that managers or other insiders of the company under coverage are more prone to disseminate positive news and to postpone the diffusion of negative ones, in particular when the results obtained are less than expected.

3.2 Methodology

In what follows, we examine the market reaction to the diffusion of the reports. The impact of an upgrade or a downgrade has been measured using the event study methodology. To determine the informative and investing value of the reports, we have separated the so-called "*report date*" from the "*public access date*".[18] We have performed two different kinds of event study analyses: the first one takes as the event date the report date, i.e. the date in which the report is given only to the private clients of the analyst ("event study 1"); the second one, instead, take as event date the so-called "*public access date*", i.e. the date in which the report is made public on the website of Borsa Italiana S.p.A. ("event study 2"). We have decided to adopt a five-point scale rating system in line with several studies in the international literature.

If no news is conveyed in the recommendation change, then no portfolio adjustment should take place in correspondence of the day in which the report is transmitted only to the clients of the brokerage firm. Both the returns and the volumes should not vary in a statistically significant manner with respect to normal values. In this case, the research activity performed by the analysts is worthless. On the contrary, if the informative content of the report is relevant and the market is efficient, there should be abnormal returns and abnormal volumes the day in which it is given to the private clients of the analyst and immediately disappear. If the market is informatively efficient, no significant reaction should take place at the public access date, since profit opportunities relative to the new information should have been already incorporated by portfolio adjustments that had taken place around the report date.

3.2.1 Abnormal returns analysis

In order to calculate abnormal returns, we use the standard event-study methodology [Brown and Warner (1980), (1985)], adopting the Market Model.

The event window is composed by the fifteen days around the event, i.e. [-15; +15], both for the report and public access date.

The estimation window, instead, necessary to estimate the Market Model parameters, and therefore to calculate abnormal returns, is considered in the 120 days preceding the event window [$-135 \leq t \leq -16$])

Averaging the abnormal returns corresponding to the N recommendations changes for the securities included in the sample (i = 1, 2 ... N) we finally obtain the mean abnormal return for time t (ARt). In order to assess the global effect of recommendation changes over the whole time event [$-15 \leq t \leq +15$], the daily mean abnormal returns have been aggregated in cumulative abnormal return (CAR).

[18] Belcredi, Bozzi and Rigamonti (2003) were the first to use this distinction for Italy.

To test the statistical significance of our results, we performed the standard parametric test proposed by Boehmer E., Musumeci J., Poulsen A.B[19].

3.2.3 *Abnormal volumes analysis*

With regard to the analysis of abnormal volumes, we decided to use the volume ratio proposed by Womack[20].

Following this method, the abnormal volume for each firm in the sample is calculated as a ratio of the volume for each relative event day to the average volume calculated from three months (60 trading days) before to three months after the event day (excluding the three day event period).

Then, Averaging the abnormal returns observations corresponding to the N recommendations changes for the securities included in the sample (i = 1, 2, ... N), we obtained an Abnormal Volume Ratio AVR_t:

Lastly, for mean abnormal volumes in response to recommendation changes issued by analysts, we determine a standard parametric test to assess whether the event has an impact on the mean of volumes.

3.3 Empirical evidence on average abnormal returns

In what follows we present the results obtained for average abnormal returns in correspondence of the recommendation change for each event study, with reference to the report date (figure 4 and table 6), and the public access date (figure 5 and table 7).

From table 6 we can notice that after the report date there are average abnormal returns significantly different from zero. For upgrades the abnormal return is 1.01% while for downgrades is equal to –0.92%, both statistically significant. It seems that the market reaction for upgrades is slightly greater than the one for downgrades. However, in the discussion of the results obtained for cumulative abnormal returns we will highlight that the CAR following a downgrade is greater than the one following an upgrade, in line with the previous literature. It is worth to notice that we observe abnormal returns not only at the report date, but also in the days close to it. All the abnormal returns in the time window [-1,+1] are statistically significant. For upgrades the abnormal return is significant also the second day before the report date, while for downgrades we find abnormal returns significantly different from zero until the third day after the report date. In figure 4 we give a graphical representation of these results.

Table 7 refers to the public access date. We do not find any abnormal return after the publication of the report in the Stock Exchange website, confirming the hypothesis of an efficient market that react at the report date.

Figure 5 shows the average abnormal returns around the public access date. It can be noticed that there is no relevant reaction in correspondence of this date, while there is a reaction in the preceding period, following the diffusion of the recommendation change at the report date. We would like, however, to highlight that there are significant abnormal returns even after the public access date.

To verify if these results create value for investors we calculated cumulated abnormal returns on different time windows.

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[19] See Boehmer E., Musumeci J., Poulsen A.B. (1991), pp. 253-272. This is the technique used in Belcredi, Bozzi and Rigamonti (2003) on the Italian case.

[20] See Womack (1996).

Table 6. Average abnormal returns in correspondence of the report date

	Report date					
	Upgrade			*Downgrade*		
Days	AR	t		AR	t	
-15	-0.04%	-0.2679		0.10%	0.7332	
-14	0.09%	0.5657		-0.04%	-0.3540	
-13	-0.09%	-0.6986		-0.29%	-2.6070	**
-12	0.02%	0.1699		-0.05%	-0.4496	
-11	-0.22%	-1.6365		0.08%	0.6529	
-10	0.02%	0.1216		0.06%	0.5399	
-9	0.14%	0.9524		0.05%	0.4174	
-8	-0.01%	-0.0680		0.14%	1.1429	
-7	-0.30%	-2.2265	**	0.08%	0.5292	
-6	0.13%	0.7557		0.03%	0.1947	
-5	0.05%	0.3200		-0.05%	-0.3234	
-4	0.26%	1.4342		-0.34%	-2.2923	**
-3	0.11%	0.6830		-0.14%	-1.0632	
-2	0.40%	2.3559	**	0.11%	0.6722	
-1	0.59%	2.1765	**	-0.54%	-3.0618	***
0	1.01%	4.3938	***	-0.92%	-5.2093	***
1	0.30%	1.7802	*	-0.60%	-4.3148	***
2	0.15%	0.8587		-0.31%	-2.4684	**
3	-0.11%	-0.7716		-0.51%	-4.0395	***
4	0.19%	1.3083		-0.07%	-0.6032	
5	-0.13%	-0.8177		-0.17%	-1.2777	
6	-0.08%	-0.5563		-0.13%	-1.0733	
7	0.07%	0.4753		-0.01%	-0.0797	
8	0.03%	0.2388		-0.10%	-0.8400	
9	0.08%	0.4982		0.11%	0.9378	
10	0.34%	1.4539		0.17%	1.2901	
11	0.31%	2.0688	**	-0.10%	-0.7761	
12	0.09%	0.5996		0.07%	0.5586	
13	0.21%	1.1555		-0.03%	-0.2405	
14	-0.03%	-0.1814		0.01%	0.0668	
15	0.02%	0.1515		-0.22%	-1.7186	

Statistical significance: * = 10%, ** = 5%, *** = 1%

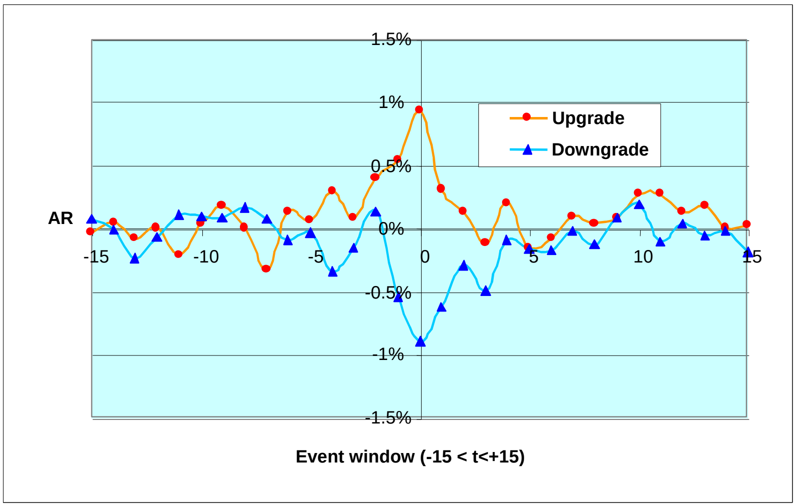

Figure 4. Average abnormal returns in correspondence of the report date

Table 7. Average abnormal returns in correspondence of the public access date

	Public access date					
	Upgrade			Downgrade		
Days	AR	t		AR	t	
-15	-0.01%	-0.0660		0.02%	0.1471	
-14	-0.17%	-1.1535		-0.15%	-1.0581	
-13	0.18%	1.2256		-0.03%	-0.2600	
-12	0.20%	1.2063		-0.19%	-1.6268	
-11	0.06%	0.3995		-0.26%	-1.9453	*
-10	0.31%	1.9223	*	0.01%	0.0893	
-9	0.28%	1.7644	*	0.25%	1.7191	*
-8	0.04%	0.2149		-0.14%	-1.0215	
-7	0.37%	2.0884	**	-0.07%	-0.6660	
-6	0.04%	0.3627		-0.24%	-1.9652	*
-5	0.06%	0.4010		-0.05%	-0.4206	
-4	0.09%	0.6919		-0.08%	-0.6387	
-3	-0.07%	-0.5163		0.06%	0.4930	
-2	-0.10%	-0.6366		-0.06%	-0.5015	
-1	-0.01%	-0.0525		0.05%	0.3507	
0	0.02%	0.1472		-0.02%	-0.1423	
1	0.02%	0.1508		0.06%	0.5312	
2	-0.09%	-0.5990		0.11%	0.9379	
3	0.32%	1.4341		-0.14%	-1.1808	
4	0.01%	0.0755		-0.15%	-1.3697	
5	0.34%	2.3931	**	-0.21%	-1.8525	*
6	0.10%	0.5601		-0.05%	-0.3359	
7	0.01%	0.0437		0.14%	1.0339	
8	-0.27%	-1.7574	*	0.10%	0.7229	
9	0.03%	0.1812		-0.22%	-1.6929	*
10	-0.22%	-1.5320		-0.32%	-2.4800	**
11	0.13%	0.8543		0.04%	0.3138	
12	0.15%	1.1541		0.20%	1.3387	
13	0.12%	0.9312		0.06%	0.4754	
14	0.13%	0.8858		0.01%	0.1001	
14	0.13%	0.8858		0.01%	0.1001	
15	0.32%	1.9154	*	0.19%	1.3631	

Statistical significance: * = 10%, ** = 5%, *** = 1%

3.4 Empirical evidence on cumulated abnormal returns

To estimate the global effect of the recommendation changes on the whole period considered, daily average abnormal returns have been aggregated to obtain the Cumulative Abnormal Return (CAR) on different time windows. We have divided the period [-15; +15] in three main windows: a three days window centered on the event date [-1; +1], a window of fourteen days preceding the previous central event window [-15; +2] and a third one including fourteen days following the central three days event window [+2; +15].

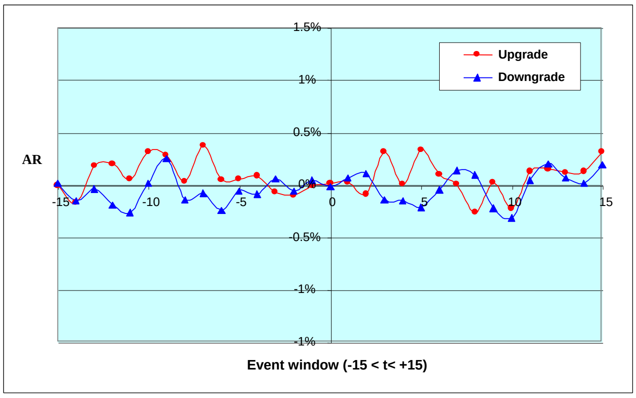

Figure 5. Average abnormal return in correspondence of the public access date

Table 8 shows the results for the three time windows considered. The results confirm the expectations: we find a CAR significantly different from zero both for upgrades and downgrades in the three days window centered around the report date, while the CAR on the three days window around the public access date are not statistically significant.

Table 8. Cumulated Abnormal Returns for event study 1 and event study 2

		Event study 1 (*Report date*)			*Event study* 2 (*Public access date*)		
		CAR	t		CAR	t	
Upgrade	[-15; -2]	0.56%	0.88318		1.30%	2.31601	**
	[-1; +1]	1.89%	6.57293	***	0.03%	0.13324	
	[+2; +15]	1.16%	1.87438	*	1.07%	1.71959	*
Downgrade	[-15; -2]	-0.26%	-0.43911		-0.95%	-2.15244	**
	[-1; +1]	-2.06%	-8.50805	***	0.10%	0.46849	
	[+2; +15]	-1.29%	-2.65161	***	-0.23%	-0.44429	

Statistical significance: * = 10%, ** = 5%, *** = 1%

For event study 1, the CAR on the window [-1; +1] is equal to 1.89% for upgrades and –2.06% for downgrades, both significant at 1%. It is worth to notice that in the fourteen days following the central event window, there is a CAR of 1.16% for upgrades and –1.29% for downgrades, signaling that the stock market does not immediately incorporate the information in the days around the event. CARs are not statistically significant, instead, before the event window. The results of event study 2 show that CARs are not significant in the three days window around the public access date while they are statistically significant in the fourteen days that preceded this date. This confirms the evidence the market react before the report is published in the Stock Exchange website, i.e. after the report date, when the information is transmitted to prices though the activity of the analysts' private clients. To verify the robustness of our results, we calculate CARs also on other time windows. For event study 1, we distinguish among upgrade and downgrade. For upgrades, the three days window centered on the report date is divided in the intervals [-1; 0] and [0; +1]. The CAR on the first window is 1.60% while the one on the second interval is 1.31% both statistically significant at 1%. It is possible to interpret the first result how the cumulate abnormal return of an hypothetical investor that had received the information contained in the report the day preceding the report date and made transactions based on this private information.

If one excludes the possibility that on the day preceding the report date some price sensitive information are diffused, this would imply a violation of the Italian financial regulation that prescribes that analysts have to transmit the report to the Consob and deposit it to the Stock Exchange managing company the same day that they give it to their private clients. The second hypothesis refers to a private client of the analyst that receive the information at the report date and trade on it until the following day. In this case, the investor still gains a positive CAR that is significantly different from zero. The information included in the recommendation change, then, seems to have value for investors. The CAR on the window [-15; -2] are not statistically significant also using other time windows, while in the following period the CAR on the window [+2; +15] that were slightly significant, become not significant if one excludes the abnormal return of the eleventh day.

For downgrades, the CAR is not significant in the three days window centered on the report date. Dividing the window in two sub-periods, we find that the CAR on the window [-1; 0] is –1.46%, while the one on [0; +1] is 1.53%, both significant at the 1%. These are the cumulative abnormal returns obtainable, respectively, by an hypothetical investor that uses in an illegal way the information contained in the report before the report date, and by an investor that operates in a legal way from the report date selling the stocks objective of downgrade. The empirical evidence that showed cumulative abnormal returns statistically significant in the fourteen days subsequent the event window, if verified on different time windows, highlights that we should take with care the hypothesis of a post-event drift. We find a CAR of –0.82% on the window [+2; +3], significant at the1%, while for the subsequent period [+4; +15] the CAR is not statistically significant.

The results obtained for the whole period, presented in table 8, are presented in figures 6 and 7 where we compare the cumulative abnormal returns following, respectively, the report and the public access date. From figure 6, it is possible to note that the cumulative abnormal returns are significant starting from the day before the report date until the following one, and then the stabilize and remain quite constant.

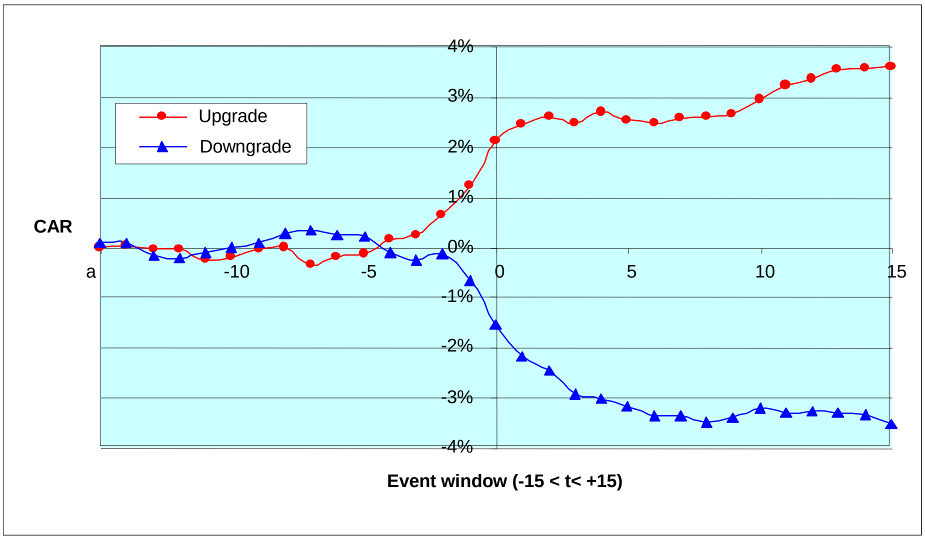

Figure 6. Cumulate abnormal returns in correspondence of the report date

It is interesting, instead, to note in figure 7 how CARs are significantly different from zero in the period preceding the public access date, confirming the market efficiency on reacting at the report date. We would like to highlight that in a study on the G7 countries Jegadeesh e Kim (2003)[21] do not find any abnormal returns in correspondence of the recommendation changes for Italy, as an exception among the countries considered. The authors, however, use the I/B/E/S database that in our view is not appropriate to the goals of an analysis of the market reaction to recommendation changes since it does not consider the report date. Comparing the report dates in our database with the ones in I/B/E/S database we highlight that the last ones follow our dates, giving evidence that the database provided by Thomson Financial is based on the public access date, instead of the report date, or at least on a date that is subsequent to the report date. This evidence would justify the fact that the author do not find any abnormal reaction for Italy. Thomson Financial also offers the database First Call, that is very detailed on the way analysts transmit the report.[22]

3.5 Empirical evidence on abnormal volumes

The analysis on abnormal volumes is performed both for the report and the public access date, and it is presented in tables 9 and 10, and in figures 8 and 9, both for upgrades and downgrades. In correspondence of the report date, there are abnormal returns equal to 1.377109 for upgrades and 1.482507 for downgrades, respectively the 37.71% and 48.25% more than the average, both statistically significant at 1%. From these results it is possible to notice that the market reaction in terms of volumes is greater for downgrades than for upgrades. This evidence is in line with the results found in the literature that affirms that, being the frequency of downgrades smaller than the one for upgrades, the reaction following downgrades is greater than for upgrades.

Both for upgrades and downgrades there are abnormal volumes in the period around the report date starting from four (three) days before this date for upgrades (downgrades) and until the second day after the report for each recommendation change. It should be highlighted that only for downgrades there are volumes significantly lower than the average, starting from the eleventh day after the report date.[23]

Table 10 shows the market reaction in terms of volumes around the public access date. There are no significant abnormal volumes above average in the considered period. On the contrary, for downgrades it is possible to observe that around the publication of the report on the Stock Exchange website there are volume below average. The results just described are shown in figures 8 and 9.

[21] See the table in Jegadeesh and Kim (2003) at p. 34.

[22] This database could represent the only alternative to the database provided by the Italian Stock Exchange on its website. It would be important to compare this database with the one used in this study.

[23] It remains to be explained the meaning of this empirical evidence.

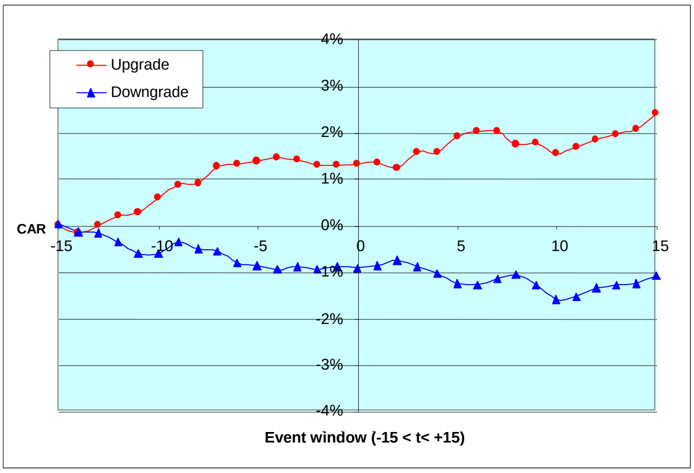

Figure 7. Cumulate abnormal returns in correspondence of the public access date

Table 9. Average abnormal volume ratios at the report date

	Report date					
	Upgrade			*Downgrade*		
Days	AVR	t		AVR	t	
-15	0.999611	-0.00648		1.040393	0.670191	
-14	0.935206	-1.33103		0.940129	-1.14559	
-13	0.980666	-0.35816		0.917181	-1.82496	*
-12	0.991303	-0.14715		0.978373	-0.33375	
-11	0.980623	-0.29111		1.057776	0.784881	
-10	0.970704	-0.49035		1.01354	0.200394	
-9	1.043274	0.572952		0.98722	-0.23871	
-8	1.047887	0.639675		1.052709	0.852352	
-7	0.994107	-0.10188		1.098485	1.451727	
-6	1.030558	0.470686		1.031289	0.609471	
-5	1.077311	1.099526		1.069214	1.031261	
-4	1.221582	1.944162	*	1.09895	1.16007	
-3	1.31508	3.15378	***	1.120036	1.671383	*
-2	1.315316	2.442495	**	1.216338	2.608156	**
-1	1.378571	3.186804	***	1.413977	4.051001	***
0	1.377109	3.81199	***	1.482507	4.731404	***
1	1.28047	3.324896	***	1.204806	3.075526	***
2	1.226462	2.745739	***	1.10277	1.71441	*
3	1.128582	1.434252		1.075282	1.133502	
4	1.115261	1.625091		1.025862	0.452258	
5	1.104858	1.479193		1.09542	0.919377	
6	1.032063	0.462292		0.940103	-1.34303	
7	1.027829	0.378128		0.929352	-1.52739	
8	0.989793	-0.19623		0.939523	-1.19514	
9	1.006434	0.096097		0.941117	-1.01964	
10	1.200135	1.86162	*	0.872022	-3.47654	***
11	1.05791	0.692054		0.916043	-1.78862	*
12	1.039564	0.569695		0.892544	-2.16614	**
13	1.133724	1.296073		0.912815	-1.60399	
14	1.008281	0.118813		0.877299	-2.62019	**
15	1.009623	0.126731		1.043006	0.600383	

Statistical significance: * = 10%, ** = 5%, *** = 1%

Table 10. Average abnormal volume ratios at the public access date

	Public access date					
	Upgrade			*Downgrade*		
Days	AVR	T		AVR	t	
-15	0.974352	-0.23945		0.840382	-3.81999	***
-14	0.999188	-0.00991		0.895909	-2.10364	**
-13	1.041609	0.49963		0.880257	-2.35563	**
-12	1.061126	0.578349		0.938808	-0.97732	
-11	1.182687	2.040784	**	0.993906	-0.08634	
-10	0.96666	-0.47856		0.99369	-0.08854	

-9	1.050719	0.624129		1.008713	0.14114	
-8	1.030865	0.43159		0.96825	-0.6807	
-7	1.142437	1.525024		0.91603	-1.53539	
-6	1.032414	0.414048		0.93564	-1.12705	
-5	0.85915	-2.79176	***	0.906091	-1.58893	
-4	0.946074	-0.83682		0.937705	-1.01738	
-3	0.957597	-0.71569		0.94895	-0.93309	
-2	1.01063	0.151068		0.929421	-1.38648	
-1	0.92814	-1.05138		0.848342	-3.05342	***
0	0.922119	-1.04793		0.796704	-4.92601	***
1	0.862244	-2.12313	**	0.819813	-3.32934	***
2	0.946815	-0.62802		0.860322	-2.88789	***
3	0.962575	-0.46911		0.880718	-2.40474	**
4	0.887984	-1.50801		0.823372	-3.82438	***
5	0.85979	-3.07128	***	0.755051	-7.4672	***
6	0.920619	-1.11471		0.88766	-1.57914	
7	1.027971	0.312663		0.974258	-0.36896	
8	1.053813	0.594411		1.06865	0.660418	
9	0.987794	-0.1486		0.924436	-1.35711	
10	0.984242	-0.17264		0.880812	-2.36257	**
11	0.932763	-1.27551		0.949154	-0.90315	
12	0.982054	-0.21338		0.893242	-2.32459	**
13	0.875158	-2.18682	**	0.956188	-0.82394	
14	0.939415	-0.80648		0.919538	-1.39746	
15	0.901713	-1.4008		0.87578	-2.07246	**

Statistical significance: * = 10%, ** = 5%, *** = 1%

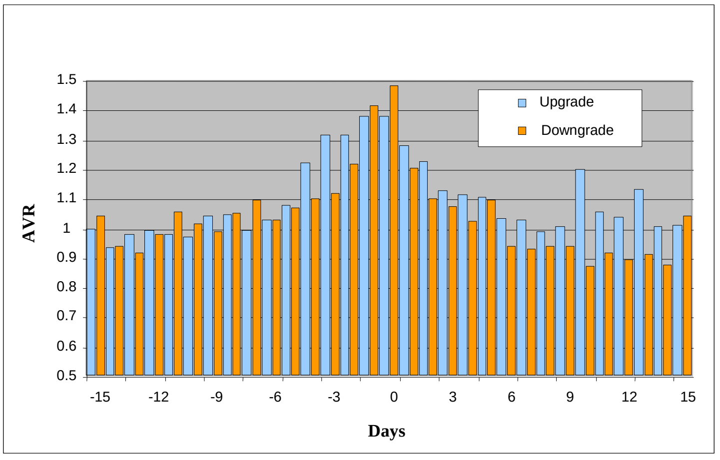

Figure 8. Average Abnormal Volume Ratios (AVRs) around the report date

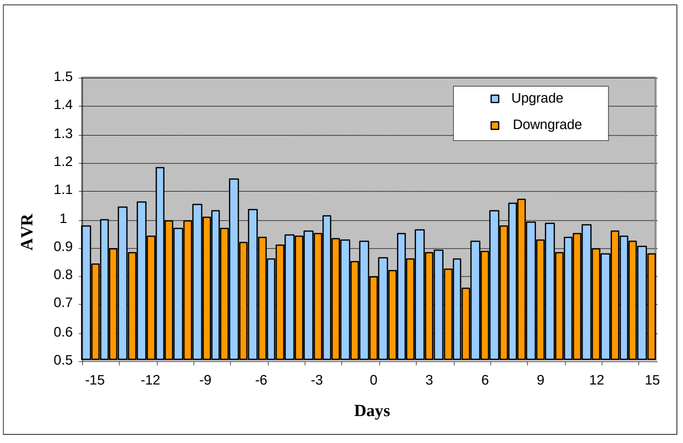

Figure 9. Average Abnormal Volume Ratios (AVRs) around the public access date

4. Conclusions

Given the role of primary relevance played by financial analysts in the process of elaboration of accounting and financial data provided by listed companies, we verify if the researches they produce really convey new information to the market, and therefore if they have value. In this respect we have analyzed the impact of recommendation changes on prices and quantities of the stocks recommended by analysts, calculating both abnormal returns and abnormal volumes associated with the dissemination of the report.

The main market reaction takes place in correspondence of the diffusion of the report to the private clients of the brokerage firm and tends to stabilize around normal values in the following period. At the report date abnormal return are statistically significant: an upgrade generates in fact a positive abnormal return of 1.01%; whereas a downgrade has associated an abnormal return equal to – 0.92 %.

With regard to volumes, an upgrade generates abnormal volumes that are 37.71% above average while a downgrade induces even a superior reaction, 48.25%. This confirms the evidence that the informative power of a downgrade is greater than the one associated with an upgrade. Abnormal returns and abnormal volumes are present even before the official diffusion of the report to the market, but also before the report date. We claim two main hypotheses to explain this evidence. The first explanation supposes a not full informational efficiency of the market, caused by leakage of information or by insider trading. The second one is based on the possibility that other important price sensitive news had preceded the diffusion of the report of the analyst. We do not exclude that the greatest part of recommendation changes are concentrated around the communication of earnings and that those news explain a great deal of the abnormal return associated with the recommendation change. Furthermore, we do not observe neither abnormal returns nor abnormal volumes that are statistically significant in correspondence of the public access date. For upgrades, the abnormal return is 0.02%, not statistically significant; while the volume ratio is 0.92211, not significant from a statistical point of view. For downgrades the abnormal return is -0.02%, not significantly different from zero; and the volume ratio is 0.7967, significantly below average.

The analysis of CARs confirms these results. At the report date, for upgrades, we find a CAR of 2.16% while no CAR is statistically significant before that date, and all the CARs are significant at the 1% level in the period after the report date. For downgrades the results are very similar, a CAR of -1.72% at the report date, no CAR is significantly different from zero before that date, while for the period after the report date all CARs are statistically significant.

With reference to the public access date, we find that CARs are significantly different from zero from a statistical point of view, starting from 9 days (11 days) before the public access date for upgrades (downgrades). This is coherent with an efficient market in which the reaction to recommendation changes begins at the report date that precedes the public access date. Around the public access date CARs remain quite significant for upgrades while for downgrades are slightly significant, and then they remain significant thereafter.

However, to better verify if there is any effect at the public access date, we also perform statistically significance tests for different windows around the report and public access date. We divide the event period [-15; +15] into three different windows. The central is the 3-days event window [-1; +1], the others two are what we call pre-event window [-15; -2] and the post-event window [+2; +15]. The results obtained confirm the expectations: there are CARs statistically significant both in case of upgrades and downgrades in the three days window around the report date, while the CARs in the three days window around the public access date are not significantly different from zero.

With reference to the first date, the CAR on the window [-1; +1] is 1.89% for upgrade and –2.06% for downgrade, both statistically significant. In the fourteen days following the central event window, there is a CAR of 1.16% for upgrades and of –1.29% for downgrades, highlighting that the market seems not to fully and quickly incorporate the information in the days around the event. There are no significant cumulative abnormal returns in the three days around the public access date, while it seems evident that they are statistically significant in the preceding fourteen days, as an additional confirm that the market react at the report and not at the public access date. To verify the robustness of the results, we calculate the CARs also on other time windows, always within the considered period, that confirm the results mentioned above. With reference to abnormal volumes, it is possible to observe that the reaction happens following the report date with volumes significantly above average. At the report date, in fact, there are abnormal volumes of 1.377109 for upgrades and of 1.482507 for downgrades, i.e. the 37.71% and 48.25% above average, both statistically significant. The market reaction in terms of volumes seems therefore greater for upgrades than downgrades, in line with previous literature that affirms that, being the frequency of downgrades smaller than the one for upgrades, the reaction in the first case is greater than the second. It remains to be investigated the investment value of strategies based on portfolios based on the type of recommendation, not distinguishing only between upgrades and downgrades, but investigating the different values of different recommendations, also with reference to the average consensus, also to verify eventual herding phenomena of the Italian stock market.

The future research should investigate if price sensitive news in correspondence of the recommendation changes could affect the results deriving from the present analysis. Even if we have to take into consideration this possibility, we think that is not very probable that a so strong empirical evidence can be explain in a systematic manner by price sensitive news in correspondence of the change of recommendation from financial analysts.

To conclude, we would like to highlight that the present analysis should be enlarged to include all the listed companies in the Italian Stock Exchange to verify if the results presented here are general or peculiar to initial public offerings.

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Appendix 1. Distribution of recommendations for IPO sample

Companies	*Number of reports*	*%*	*Companies*	*Number of reports*	*%*	*Companies*	*Number of reports*	*%*
(1)	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
Enel	293	6.28%	Mondo Tv	37	0.79%	Richard Ginori	12	0.26%
BNL	179	3.84%	Caltag. Ed.	37	0.79%	on Banca	12	0.26%
Tod'S	169	3.62%	Novuspharma	36	0.77%	PCU Italia	12	0.26%
Luxottica	159	3.41%	El.En	36	0.77%	Juventus	12	0.26%
Fiscali	156	3.35%	Giacomelli	36	0.77%	Hera	12	0.26%
B.M.P.S.	146	3.13%	Lottomatica	35	0.75%	IT WAY	11	0.24%
STMicroel.	144	3.09%	Targetti	33	0.71%	Asm Br.	11	0.24%
S.Rete Gas	144	3.09%	Astaldi	33	0.71%	Gandalf	10	0.21%
E.Biscom	126	2.70%	Tc Sistema	32	0.69%	Digital bros	10	0.21%
Ducati	112	2.40%	Datamat	30	0.64%	Algol	10	0.21%
Campari	112	2.40%	Engineering	29	0.62%	Gr.Navi Veloci	9	0.19%
AEM	105	2.25%	Aisoftw@Re	25	0.54%	Negri Bossi	9	0.19%

Coin	97	2.08%	Tas	24	0.51%	Sol	8	0.17%
De Longhi	93	1.99%	ePlanet	24	0.51%	Interbanca	8	0.17%
Acea	88	1.89%	Giugiaro	23	0.49%	Roncadin	8	0.17%
Finmatica	87	1.87%	Dada	23	0.49%	Acsm	8	0.17%
Mar. Burani	85	1.82%	Fidia	23	0.49%	Freedomland	8	0.17%
Cairo Com.	75	1.61%	Meliorbanca	23	0.49%	Dmail	8	0.17%
Saeco	73	1.57%	Emak	22	0.47%	Fiera Milano	8	0.17%
Cremonini	72	1.54%	C.Latte Torino	22	0.47%	Air Dolomiti	7	0.15%
Data Service	68	1.46%	Biesse	21	0.45%	Vemer	6	0.13%
I.Net	67	1.44%	Prima Ind.	20	0.43%	Socotherm	6	0.13%
Granitifiandre	67	1.44%	Pol.S.Faust.	20	0.43%	Olidata	5	0.11%
Permasteelisa	65	1.39%	Chl	20	0.43%	S.S.Lazio	4	0.09%
Class Editori	62	1.33%	Esprinet	20	0.43%	Gefran	4	0.09%
Txt E-Sol.	56	1.20%	Opengate	18	0.39%	A.S. Roma	4	0.09%
Aem Torino	55	1.18%	Tecnodif.	18	0.39%	Trevisan	3	0.06%
Ferretti	54	1.16%	Cto	18	0.39%	Beghelli	2	0.04%
C.Risp.Firenze	53	1.14%	Cdc Point	17	0.36%	Buffetti	2	0.04%
Bayerische	49	1.05%	Trevi Group	16	0.34%	Aer.Firenze	2	0.04%
Reply	49	1.05%	Bb Biotech	16	0.34%	Lavorwash	2	0.04%
Mirato	48	1.03%	Meta	16	0.34%	Cit	2	0.04%
Euphon	48	1.03%	Acotel	15	0.32%	Grandi viaggi	1	0.02%
Cad It	42	0.90%	Datalogic	14	0.30%	Basic Net	1	0.02%
Art'e	41	0.88%	Marcolin	13	0.28%	Castelgarden	0	0.00%
Buongiorno	39	0.84%	Inferentia	13	0.28%	Fil.Pollone	0	0.00%
Pirelli R.E.	38	0.81%	Viaggi Vent.	13	0.28%	Isagro	0	0.00%

Appendix 2. Distribution of recommendations for brokerage firms covering IPO sample

Brokerage Firm	*No. report issued*	*%*	*No. covered companies*	*Brokerage Firm*	*No. report issued*	*%*	*No. covered companies*
(1)	*(2)*	*(3)*	*(4)*	*(1)*	*(2)*	*(3)*	*(4)*
Unicredito	415	8.90%	40	ABN Amro	35	0.75%	18
Intermonte	398	8.54%	70	Massimo Mortari	34	0.73%	10
B.IMI	396	8.49%	59	Meliorbanca	33	0.71%	10
IntesaBci	313	6.71%	57	SG Securities	33	0.71%	11
Euromobiliare	312	6.69%	44	B.Intermobiliare - Bim	22	0.47%	3
Banca Leonardo	264	5.66%	30	Fortis Bank	21	0.45%	9
Deutsche Bank	209	4.48%	26	Goldman Sachs	21	0.45%	7
Idea Global	208	4.46%	73	Albertini & Co.	20	0.43%	14
Merrill Lynch	178	3.82%	19	Citigroup	17	0.36%	12
WebSim	154	3.30%	49	C.Suisse First Boston	17	0.36%	9
Centrosim	132	2.83%	26	B.Finnat Euramerica	14	0.30%	8
Mediobanca	124	2.66%	26	Interbanca	14	0.30%	3
Banca Akros	120	2.57%	30	Credit Lyonnais	13	0.28%	7
BNP Paribas	113	2.42%	24	Uniprof sim	10	0.21%	9
G.UBS Warburg	113	2.42%	21	WestLB Panmure	9	0.19%	1
Twice	110	2.36%	29	J P Morgan	8	0.17%	5
Julius Baer	98	2.10%	37	M.Credito Centrale	7	0.15%	1
Banca Aletti & Co.	80	1.72%	11	Consors	6	0.13%	5
Sant.Centr.Hisp.	77	1.65%	26	Banca di Roma	5	0.11%	1
Cheuvreux	74	1.59%	37	Cazenove & Co.	5	0.11%	4
Ras	71	1.52%	24	Metzler Italia	5	0.11%	4
Actinvest Group	66	1.42%	27	Banknord	4	0.09%	3
Eptasim	57	1.22%	24	S.S.Smith Barney	4	0.09%	2
Lehman Brothers	52	1.12%	8	Banca Mediosim	3	0.06%	3
Cofiri Sim	42	0.90%	19	Flemings Research	3	0.06%	1
D.Kleinwort Benson	41	0.88%	8	Gestnord	3	0.06%	3
Abaxbank	39	0.84%	17	B.Pop.di Bari	2	0.04%	1
Ing Barings	37	0.79%	11	Banca Sella	2	0.04%	2