Market Reaction to the Issuance of Analysts' Recommendations

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Abstract

The objective of this paper is to examine the market reaction to the issuance of recommendation by financial analysts. We add to the previous international literature in several respects mostly due to the Italian peculiarity and for the unique dataset that we have created. Italy is an important case since analysts have to compulsory send their reports to the Stock Exchange Commission and the Stock Exchange the same day they give it to their clients. Reports should be available on the Stock Exchange website within a period of 60 days. As far as we know there is no other country in the World in which this delayed compulsory disclosure is provided. We have constructed a database that includes 22,194 reports issued on companies listed in the Italian Stock Exchange from September 1999 to July 2005. For the purposes of our analysis we calculate abnormal returns and abnormal volumes associated with the dissemination of the reports, performing two distinct short-term event studies: the first associated with the "report date", i.e. when the analyst gives the report to private clients; the second with regard to the "public access date", i.e. when the report is freely and publicly available on the Stock Exchange website. First of all, we find a violation of law since some intermediaries send their reports after the term allowed by regulation, more precisely one third of the total number of reports issued from January 2004 to July 2005 seem to be in violation of law. At the report date we find average abnormal returns of 0.67% for upgrades, and of -0.74% for downgrades, coherent with the hypothesis that recommendation indeed convey new information to the market that efficiently react to these news. However, we find abnormal returns even some days before the report date. This can be the effect of other news affecting prices, e.g. earnings announcement, or the violation of Italian regulation. In a three days event window centered around the report date, we find that downgrades have an impact equal to -1.64%, in terms of CAR, while upgrades record a CAR equal to 1.38%, coherent in sign with previous studies in the literature, but not in magnitude, usually much more greater for downgrades. Our explanation is that in the period considered the percentage of upgrades and downgrades was very similar, therefore the market reacts almost in the same way. The event study related to the public access date show very different results. We do not find statistically significant abnormal returns, suggesting that the market efficiently does not react to the mere publication of the report on the website. It remains to be investigated if abnormal returns before the report date are due to the effect of price-sensitive news different from the recommendation change or if they mean violation of the Italian regulation.

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1. Introduction

The role of financial analysts is of primary relevance in the process of elaboration and transmission of information to investors in reducing the costs associated in gathering information. If the researches produced by analysts really convey new information to an efficient market, then they should create value.
The main objective of the paper is to examine the market reaction to the reports issued by analysts in the Italian Stock Exchange, and to define the informative contribution embedded on them, as well as their investment value.
We consider the Italian case for the peculiar regulatory system that imposes to financial analysts to transmit the reports to the Consob, the Italian Securities and Exchange Commission, and deposit them to the managing company of the Italian Stock Exchange, Borsa Italiana S.p.A., the same day in which the reports are available to their private clients.
We constructed a database including 22,194 reports issued between the 9th September 1999 and the 25th July 2005 on all the companies listed in the Italian Stock Exchange. To evaluate the market reaction we calculate both extra-returns and abnormal volumes deriving from recommendation changes and excess returns for all kind of unchanged recommendations.
We perform two separate short term event studies using two different event dates: the first is the moment in which the report is given to the private clients of the analyst ("report date"), while the second refers to the moment in which the report is published in the Stock Exchange website ("public access date").
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.
The results obtained show an average abnormal return of 0.67% for upgrades and of -0.74% 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].

The CAR on the three days window around the event date is 1.38% for upgrades and -1.64% 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 0.51% for upgrades and of -0.66% for downgrades, both statistically significant, even if the average abnormal returns are not significantly different from zero.
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

Several studies[1] focus on the market reaction to recommendation changes and on the effects of the activity of financial analysts. Some stylized fact seem to arise.
Womack (1996) analyzes 1,573 recommendation changes issued between 1989 and 1991, with respect to 822 companies listed in the US stock market. The analysis uses the database provided by First Call Corporation, a company that records in real time virtually all the reports issued by analysts. The empirical evidence shows that stocks subject to recommendation changes record large abnormal returns.[2] However, this initial reaction is incomplete, since during the post-event period, for added-to-buy recommendation the mean post-event drift is 2.4%, and short-lived (one month), whereas for added-to-sell recommendation is -9.1% larger and lasting for six months. The asymmetry between these two values can be explained with the higher frequency with which analysts tend to upgrade their recommendations and with the greater cost of issuing a negative report. The post-event drifts seem to 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 issue positive recommendations (the proportion of buy to sell is 7 to 1) and mainly focus on bigger companies.
Juergens (1999), instead, measures the value of the recommendations formulated by analysts when the reports are followed or preceded by the diffusion of price sensitive information from the issuing companies. This analysis confirms the

[1] For a recent review of the literature regarding analysts' recommendations and earnings forecasts since 1993, see Ramnath, Rock, Shane (2005). A pioneer studies on market reaction to analysts' recommendation changes is Stickel (1995).

[2] The CAR on a three days window centered on the event day and adjusted for the company size is 3% for added-to-buy recommendations and -4.7% for added-to-sell recommendations. Bjerring, Lakonishok and Vermaelen (1983) and Beneish (1991) have documented similar anomalies in response to the diffusion of all the recommendations issued by analysts. Kim, Lin and Slovin (1997) consider a sample constituted only of buys that are the initiations of coverage. The results obtained confirm Womack's conclusions.

hypothesis of an high informative contribution of the recommendation formulated by the analysts. All the recommendations, not only the ones followed or preceded by price sensitive news issued by the issuing companies, but even those for which there is no announcement of relevant news, generate abnormal returns and affect stocks' volatility. Furthermore, the empirical evidence show that the information embedded in analysts' reports have a greater investment value if compared to the public available information.[3]

Taffler and Ryan (2002) identify the companies' informational events that are able to determine relevant changes of price and quantity of the stocks of the companies to which the news are referred. The authors use a methodology that takes into consideration all the information that can affect a company, including the anticipation or leakage of information before the diffusion to the public. About 65% of the changes in prices and volumes can be explained by the publicly available information. It has been identified a restrict set of categories of news that can be considered as factors determining anomalies in price and volume movements. Analysts' recommendations and revisions in earnings forecasts that are not associated with the diffusion of other news prevail on all other categories in terms of relevant market reactions. These two factors explain 17.4% of price changes and 16.1% of volume changes that have been the consequences of the events affecting the company. The publication of accounting prospects, instead, explains the 17% of the price changes and the 15.2% of the volume changes. The market reaction to changes of recommendations or earning forecasts can be used to define a series of investment strategies.

Boni and Womack (2003) study the competition between analysts, from 1996 to 2001. To add value to their recommendations, analysts specialize in the study of few stocks. The authors highlight that the returns achievable through strategies based on analysts recommendation changes record a Sharpe ratio that is five times greater than the one associated with a "price momentum" strategy [Jegadeesh and Titman (1993)]. A strategy consisting in buying stocks that have been upgraded and selling stocks that have been downgraded is able to generate a monthly return of 1.4%, about the 18% per year. After a month from the recommendation change, the returns from the stocks recommended by the analysts are positive for 53 firms out of 59. The competition among brokerage firms reduces the opportunity to profit from recommendation changes: portfolios formed with stocks followed by a great number of analysts generates lower returns.

Barber, Lehavy, McNichols and Trueman (2003) show that, from January 1996 to June 2003, stocks that have been upgraded by brokerage firms with the lowest percentage of buy recommendations record better returns with respect to stocks upgraded by brokerage firms that have, on average, an higher percentage of buy recommendations. The opposite occurs for downgrades.

Jegadeesh and Kim (2003) compare recommendations issued by analysts in the G7 countries between 1993 and 2002, evaluating their investment value.[4] They consider 50,260 upgrades and 63,557 downgrades in the United States; 38,345

[3] These results are coherent with the broad definition of market efficiency given by Grossman and Stiglitz (1980) since positive returns are necessary to compensate for the costs incurred in collecting information. In their definition of market efficiency, it seems that analysts' recommendations have value for investors.

[4] For Italy, the period considered is shorter because of availability of data in the IBES Database on stocks' recommendations only from October 1993 to December 1998.

upgrades and 40,669 downgrades in the remaining G7 countries. The evidence shows that the proportion of sell and strong sell recommendations is lower than the one of buy and strong buy in all countries. The results also highlight that stock prices react significantly to changes of recommendation the day of the event and the following one. This reaction occurs in all the countries except from Italy;[5] while the greatest market reaction refers to the United States, followed by Japan. The authors, analyze different investment strategies consisting in buying stocks that have been upgraded and in selling stocks that have been downgraded. Once more, the greatest profits refers to the United States and Japan.

Belcredi, Bozzi and Rigamonti (2003) perform for Italy[6] a study similar to Stickel (1995) and Womack (1996). They analyze 4,990 reports, published on the Italian Stock Exchange website between September 1999 and March 2002 issued by 56 brokers on 237 listed companies. Recommendations are classified with an eight-points scale system, from strong buy to sell. Their study considers 659 changes of recommendation, and documents an abnormal return of 2.52% for upgrades and of -2.63% for downgrades in a three-days window centered around the report date. The authors show significant abnormal volumes for upgrade and an anticipated market reaction, due either to the diffusion of price sensitive information or to a leakage of information in the days preceding the diffusion of the research. The authors also consider the market reaction following the public access date, finding that there is no statistically significant market reaction, both considering extra-returns or abnormal volumes, highlighting that the market correctly reacts after the report date, when the real information is conveyed, and not to the mere publication in the website.

Cervellati, Della Bina, Giulianelli (2005) analyze the market reaction to changes in recommendations issued on companies listed in the Italian Stock Exchange, using the distinction among suggested report and public access date but on all the recommendations regarding Initial Public Offerings from 1998 to 2003, founding similar results. The decision to analyze only the recommendations having regard IPOs is due to two main reasons. The first was a practical one: the reports on IPOs in the period considered were about 5,200; a rather impressive amount of data to process, considering that reports shall be analyzed manually one by one, being not homogeneous.[7] The second and most important reason is instead a theoretical one: analysts have a crucial role in IPOs since, quite often, the company that is going public is not known by investors, therefore, analysts' recommendations are particularly valuable in conveying new information.[8]

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[5] We claim that this lack of reaction for Italy can be explained with a problem of the database used in this study, i.e. the one of I/B/E/S offered by the company Thomson Financial. We will discuss the details in the discussion that follows.

[6] For Italy, also see Cervellati and Della Bina (2004) and Fabrizio (2000).

[7] Cervellati, Della Bina and Pattitoni (2005) propose an analysis of the investment values of strategies based on the average consensus of financial analysts' recommendations, using all the 16,634 reports available on the website of Borsa Italiana from the 1st January 1999 to the 23rd July 2004.

[8] However, we should highlight that the date that the authors use to denote the public access date is the last one of the interval allowed by the Consob regulation and not the exact publication date on the website, since this information has been released by the Italian Stock Exchange only starting July 2004.

3. The impact of recommendation changes

3.1 Description of the dataset

The dataset includes all 22,194 reports available on the website of Borsa Italiana S.p.A., regarding all the companies listed in the Italian Stock Exchange and issued by analysts from the 9th September 1999 to the 25th July 2005.
The Italian regulatory framework is a unique one since it imposes several duties on financial analysts. Art. 69 of the so-called "*Regolamento Emittenti*" (Consob Regulation no. 11971 of 14th May 1999, on Issuers), in fact, states that issuers of financial products, authorized brokerage firms and institutions having ownership relationships with them, are obliged to transmit to Consob and to deposit to Borsa Italiana S.p.A. all the "studies and statistics"[9] that they disseminate to the general public, on the same day of dissemination.[10] However, if the reports are only for the shareholders of the issuing firm, 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 time interval allowed between the report date and the deposit date changed over time: it initially was set (the 12th June 1999) to be 15 calendar days, then passed to 10 days (the 16th June2001), and finally to 60 days (11th July 2002).
In this study, we enlarge that sample, arriving at 22,194 reports and we decide to focus not only on recommendation changes, but on the market reaction to the dissemination of every report.
We have performed a careful analysis of the sample, eliminating double reports[11] or reports lacking the recommendation, so that the final sample contained 14,633 reports issued by 60 brokerage firms on 233 companies.

3.1.1 The systems of classification of the recommendations

The definition of a stock rating system is a rather delicate operation since analysts use a variety of terms to formulate their recommendations. The most simple rating system consists of a three-points scale (buy, hold, sell), while the most used by analysts is a five-points scale system (buy, outperform, hold, under-perform, sell). However, it is possible to have other rating systems with a different number of scales (six or eight for example) or numerical systems.[12]
It is however unavoidable a certain degree of subjectivity in realizing a rating system that pretends to be representative of the recommendations.
For the purposes of the analysis, we decided to classify the recommendation using a five-points scale, since it is probably the one mostly employed by academics at an international level. Since rating systems are not homogeneous, it

[9] We would highlight that Italian regulation does not contain a precise definition of "research" while it generically refers to "studies and statistics". In contrast, the American SEC gives a precise definition of "equity research" or "research report".

[10] Reports should also include a disclaimer on potential conflict of interests. With reference to the potential problem of conflict of interest in the Italian Stock Market, see Cervellati and Della Bina (2005).

[11] They could be identical apart from the language used (Italian or English) or just repeated.

[12] Belcredi, Bozzi, and Rigamonti (2003) use a eight-points scale from strong buy to sell, while Fabrizio (2000) uses a four-points scale (buy, hold, sell and "other recommendations").

is important to pay attention in 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.

3.1.2 The matrix of recommendation changes

Once defined the rating systems, the next step consists in the construction of the so-called matrix of recommendation changes (table 2).
There are two fundamental reasons to analyze recommendation changes instead of the series of recommendations itself [Stickel (1995), Womack (1996)]. First, an efficient market should react to new information, and not to the reiteration of past information. Second, recommendations are subject to "*calendar clustering*" since they are often issued in response to the publication of periodical financial reports from the companies, or after important announcements. To test this hypothesis, we decided to calculate the market reaction also to the reiteration of the same recommendation. To analyze the changes we have considered only those reports that contained the current and previous rating, excluding 2,553 reports.
Table 1 proposes the basic description of the database, differentiating among the changes in recommendations (upgrades and downgrades) from the reports that just reiterate the same recommendation.

Table 1. Basic description of the database

Part A. Reconciliation of initial sample to our final sample

Total number of studies	22,194
Studies that are non-monographic, double, without rating, with ambiguous rating	5,008
Total number of monographic studies with rating	17,186
Studies without previous rating	2,553
Total number of monographic studies that form the sample of observations	14,633

Part B. Changes and Reiteration of Recommendations

Recommendation	Number of reports	(%)
Unchanged	12,328	84.25
Upgrade	1,098	7.50
Downgrade	1,207	8.25
Total	14,633	100

It is worth noting that the percentage of upgrades is less than the percentage of downgrades. It seems therefore that financial analysts tend to revise with greater frequency their recommendations downward rather than upward. This result can probably be explained if we consider the period in which the reports were issued in correspondence with one of the greatest bear markets of all times (2000-

2001). The greater frequency of downgrades rather 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. Further evidence of the greater frequency of downgrades than of upgrades in the year following 2000-2001 are presented in Jegadeesh and Kim (2003) and in Ivkovic and Jegadeesh (2004), while is in contrast to what found in previous other papers like Womack (1996) that however refer to a previous period characterized by bull markets.

Table 2. Matrix of changes of recommendation (percentages in brackets)

Current Rating	Previous Rating					
	Buy	Add	Hold	Reduce	Sell	Total
Buy	**4.119** (28.15)	**193** (1.32)	**254** (1.74)	**16** (0.11)	**6** (0.04)	**4.588** (31.35)
Add	**185** (1.26)	**2.795** (19.10)	**382** (2.61)	**50** (0.34)	**1** (0.01)	**3.413** (23.32)
Hold	**325** (2.22)	**392** (2.68)	**4.444** (30.37)	**143** (0.98)	**40** (0.27)	**5.344** (36.52)
Reduce	**24** (0.16)	**32** (0.22)	**164** (1.12)	**687** (4.69)	**13** (0.09)	**920** (6.29)
Sell	**5** (0.03)	**2** (0.01)	**65** (0.44)	**13** (0.09)	**283** (1.93)	**368** (2.51)
Total	**4.658** (31.83)	**3.414** (23.33)	**5.309** (36.28)	**909** (6.21)	**343** (2.34)	**14.633** (100)

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 report date from the public access date. 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 public access date ("event study 2").

If no news are conveyed in the recommendation change, then we should observe no extra-returns or abnormal volumes since 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. In this case, the research activity performed by the analysts should be worthless. On the contrary, if the informative content of the report is relevant and the market is efficient, we should observe extra-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 efficient, then no significant reaction should take place at the public access date, since profit opportunities relative to the news should have been already incorporated by portfolio adjustments that had taken place around the report date.

3.2.1 Abnormal returns analysis

For each security *i* in the sample the actual time *t* return (R_{it}), can be divided in a normal component (R_{it}^*), defined as the return that would be expected if the event (i.e. the recommendation change) did not take place and in an anomalous or abnormal component (ε_{it}) that on the contrary reflects the impact of the event on the security price [MacKinlay (1997)].
Only the abnormal component measures the excess return (positive or negative) that occurs after an upgrade or a downgrade issued by an analyst.
Formally:

$R_{it} = R_{it}^* + \varepsilon_{it}$ or, with an alternative expression: $\varepsilon_{it} = R_{it} - R_{it}^*$

where ε_{it}, R_{it}, and R_{it}^* are, respectively, the abnormal, actual, and normal returns, for time *t*. In this formulation the abnormal return is the actual *ex post* return of the security over the event window minus the normal return of the firm over the event window.
In order to assess the normal component, we use the *Market Model*. This return-generating process assumes a stable linear relation between the market return and the security return, where the market return is the conditioning information for the normal performance model [Brown and Warner (1980), (1985)]. Therefore the previous relation can be re-expressed as follows:

$R_{it} = (\alpha_i + \beta_i R_{mt}) + \varepsilon_{it}$ or $\varepsilon_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$ with $R_{it}^* = \alpha_i + \beta_i R_{mt}$

where R_{it} is the time *t* return on security *i*; R_{mt} is the time *t* return on the value-weighted market portfolio (Mibtel); α_i e β_i are the parameters of the *Market Model* (α_i is the intercept and β_i is the linear regression coefficient of the estimated model computed in the 125 days preceding the *event window* [$-140 \le t \le -16$]); ε_{it} is a random variable which identifies the abnormal return. For each security *i* the actual time *t* return is computed as the natural logarithm of the ratio between the price of security *i* for time *t* and the price of security *i* for time *t-1*. The same methodology is used to assess the performance of the value-weighted market portfolio (Mibtel).
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 time *t* (AR_t):

$$AR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it}$$

where $AR_{it} = \varepsilon_{it}$

3.2.2 Cumulative Abnormal Returns

In order to assess the global effect of recommendation changes over the whole time event [$-15 \le t \le +15$], the daily mean abnormal returns have been aggregated in cumulative abnormal return ($CAR_{q,s}$):

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

where q = -15; s = +15. The t statistics used for the statistical significance of abnormal returns can be computed as follows:[13]

$$t = \frac{\frac{1}{N}\sum_{i=1}^{N} AR_{it}}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}\left(AR_{it} - \sum_{i=1}^{N}\frac{AR_{it}}{N}\right)^2}}$$

Under the null hypothesis, H_0, the daily mean abnormal returns for time t (AR_t) is zero so that recommendation changes have no impact on the mean of returns.

3.2.3 Abnormal volumes analysis

The following volume ratio has been used[14] to determine abnormal volumes:

$$AVR_{it} = \frac{V_{it}}{\left(\sum_{t=-16}^{-75} V_{it} + \sum_{t=16}^{75} V_{it}\right) \times \frac{1}{120}}$$

where V_{it} is the overall number of shares traded i for time period t. Abnormal volume, AVR, for each firm in the sample is calculated as a ratio of the volume, V_{it}, for each relative event day to the average volume from three months (60 trading days) before to three months after the event (excluding the three day event period). Averaging the abnormal returns observations corresponding to the N recommendations changes for the securities included in the sample (i = 1, 2, ... N), it is possible to obtain an Abnormal Volume Ratio AVR_t:

$$AVR_t = \frac{1}{N}\sum_{i=1}^{N} AVR_{it}$$

For mean abnormal volumes in response to recommendation changes issued by analysts, we determine a test to assess whether the event has an impact on the mean of volumes. The test used for the statistical significance is:

$$t = \frac{\frac{1}{N}\sum_{i=1}^{N}\left(AVR_{it} - 1\right)}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}\left(AVR_{it} - \sum_{i=1}^{N}\frac{AVR_{it}}{N}\right)^2}}$$

Under the null hypothesis, the daily mean abnormal volume for time t (AVR_t) is

[13] See Boehmer E., Musumeci J., Poulsen A.B. (1991), pp. 253-272.

[14] See Womack (1996).

equal to 1, i.e. recommendation changes have no 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 with reference to the report date and the public access date.

From table 3, we highlight that at the report date, for upgrades the extra-return is 0.6658% while for downgrades is equal to -0.7369%, both statistically significant. In absolute terms, the market reaction for upgrades is lower than for downgrades. It is worth to notice that we observe abnormal returns not only at the report date, but also around it. The abnormal returns in the window [-1,+1] are statistically significant. For upgrades the abnormal returns are significant also the second day before and after the report date, while for downgrades we find abnormal returns significantly different from zero until the second day after the report date.

The results are in line with our intuition that an efficient market should react in a positive way to upgrades (good news) and negatively to downgrades (bad news). However, if the market is perfectly efficient, we should observe an immediate and exhaustive reaction the day corresponding to the report date,[15] while we observe extra-returns also some day following the report date and some day in advance.

The fact that there are abnormal returns statistically different from zero some day before the report date can be explained in different ways. The first explanation is that there exists a leakage of information before the report date, i.e. that analysts give the reports to their private clients, or at least to a part of them, even before the official report date. This would result in a violation of law, being in contrast with Consob regulation that requires that analysts to send the report the same day that is given to the analyst's private clients.

An alternative explanation is that some price-sensitive information are present in the period before the recommendation, e.g. an earning announcement. Of course, if some important news are disseminated before the report date, this will not result in a violation of law, rather in a correct market response.[16]

[15] Or the day following it, if the report is given to the analyst's private clients when the market is close.

[16] In a work in progress paper, we are checking for price-sensitive news, focusing our attention on earning announcements.

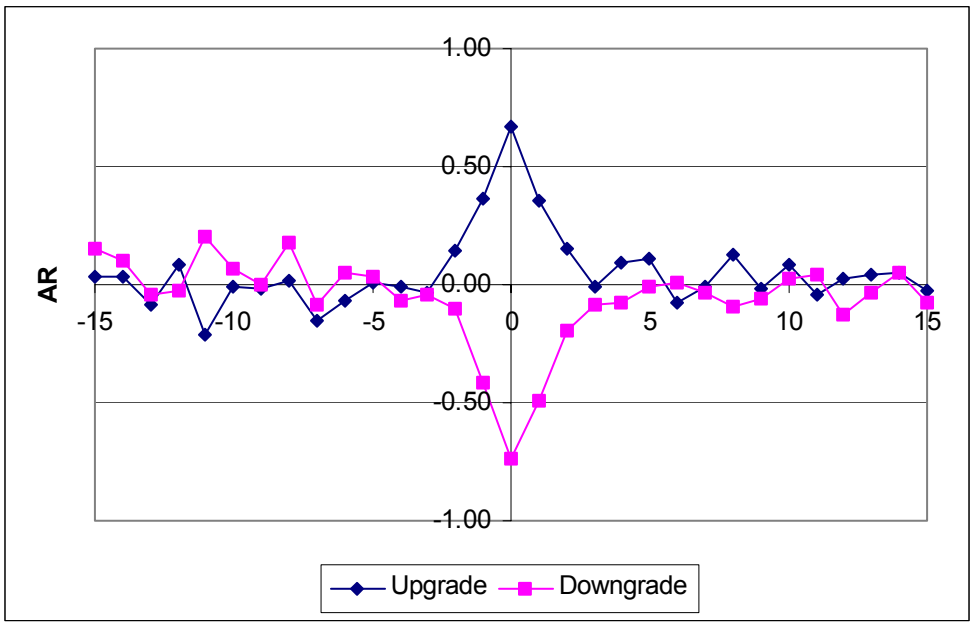
Table 3. Average abnormal returns in correspondence of the report date

	Report date					
	Upgrade			Downgrade		
Days	AR(%)	t	Sign	AR(%)	t	Sign
-15	0.0298	0.5657		**0.1538**	2.3844	**
-14	0.0315	0.5474		**0.0998**	1.7063	*
-13	-0.0879	-1.5884		-0.0417	-0.6196	
-12	0.0861	1.6288		-0.0248	-0.4587	
-11	**-0.2092**	-3.8245	***	**0.2043**	3.7603	***
-10	-0.0093	-0.1589		0.0695	1.1567	
-9	-0.0128	-0.2250		-0.0004	-0.0066	
-8	0.0187	0.2973		**0.1759**	2.8799	***
-7	**-0.1497**	-2.6412	***	-0.0824	-1.3211	
-6	-0.0701	-1.1712		0.0528	0.7640	
-5	0.0058	0.0947		0.0375	0.4900	
-4	-0.0089	-0.1394		-0.0670	-1.0034	
-3	-0.0350	-0.5368		-0.0453	-0.6921	
-2	**0.1454**	2.0133	**	-0.1017	-1.2446	
-1	**0.3625**	4.1801	***	**-0.4175**	-4.6655	***
0	**0.6658**	8.2951	***	**-0.7369**	-8.6100	***
1	**0.3556**	5.4266	***	**-0.4899**	-7.0542	***
2	**0.1536**	2.3120	*	**-0.1915**	-3.2182	***
3	-0.0063	-0.0986		-0.0813	-1.3530	
4	0.0895	1.4668		-0.0772	-1.2715	
5	**0.1077**	1.8133	*	-0.0119	-0.1847	
6	-0.0774	-1.3309		0.0080	0.1394	
7	-0.0071	-0.1141		-0.0362	-0.5903	
8	**0.1265**	2.1127	**	-0.0908	-1.5613	
9	-0.0186	-0.3180		-0.0557	-0.9834	
10	0.0889	1.2342		0.0241	0.4380	
11	-0.0398	-0.6897		0.0382	0.6947	
12	0.0256	0.4418		**-0.1266**	-2.3601	**
13	0.0438	0.7372		-0.0375	-0.6572	
14	0.0529	0.8790		0.0546	0.8927	
15	-0.0251	-0.4432		-0.0765	-1.3832	

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

In figure 1 we give a graphical representation of these results that clearly shows the anticipated market reaction before the report date, and the small drift in the days closely following the report date.

Figure 1. Average abnormal returns in correspondence of the report date



The second event study, instead, refers to the public access date, i.e. when the report is published in the Stock Exchange website. While the overall results are referred to the entire sample period, i.e. from September 1999 to July 2005, with regard to this event study, we only have data from the 1st July 2004 to the 25th July 2005.[17] We have calculated the differences between the report date and the public access date. Figure 2 gives a graphical representation. In the horizontal axis we put the number of days between the two dates, while in the vertical one we calculate the frequencies dividing the number of times the same difference between the two dates appears in our dataset on the total. We firstly observe that the 8.57% of the cases we have no differences between the report and the public access date, i.e. they coincide. In what follows, when calculating the extra-returns and abnormal volumes we have excluded the cases of coincidence among the two dates since we want to test the efficiency of the market. We are expecting no market reaction to the mere publication on the website of the recommendation. Therefore, we have to exclude the cases in which the publication appears the same day of the report date, otherwise we would include the effect of the real report date. Another peak can be observed after 7 days (5,29% of the total), suggesting that several intermediaries do not immediately send the report to be published but they send it within a week. About the 20% of the reports are published within the first week. If we recall that the law prescribes to publish the report within 60 days, we can highlight the percentage of reports that complies with the regulation, that is about 67% of the total. There is, therefore, one third of reports that are issued after the period allowed by law. Since Borsa Italiana to publish the reports uses an automatic system that rends available the report the same day the intermediaries send it, it seems that some intermediaries send the reports after the maximum date allowed by regulation.[18]

[17] We are currently elaborating new data until January 2006.

[18] Almost 30% of the reports are issued the last 12 days of the interval (i.e. from the 49th day to the 60th),

Figure 2. Number of days between the report date and the public access date

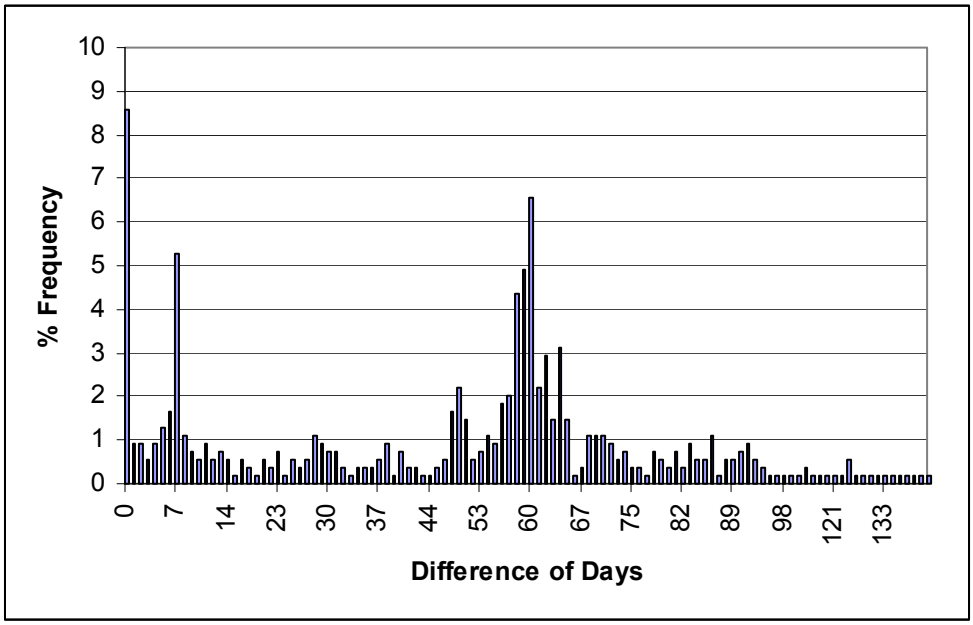


Figure 3 shows the average abnormal returns around the public access date. It can be noticed that there is a small, slightly significant, reaction in correspondence of this date for upgrades, and the day after for downgrades.[19]

Figure 3. Average abnormal return in correspondence of the public access date

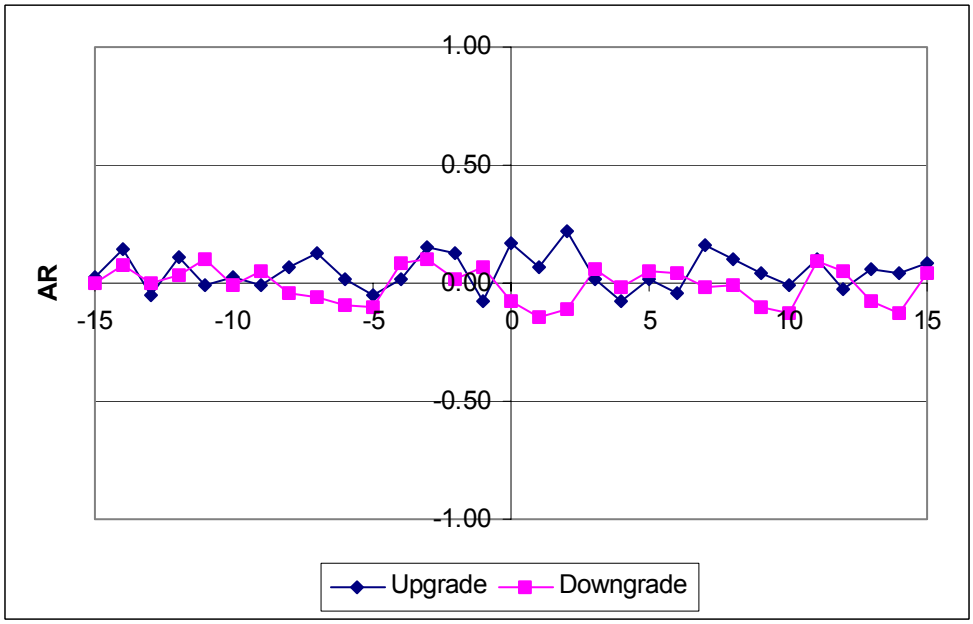


Table 4 refers to the public access date.

with a 6.57% of reports being published the 60th day. Another 15% of report is published within 10 days from the end of the period required by law, i.e. from the 61st to the 70th day, summing to about 82% within the first 70 days. This is like saying that almost all the reports are issued in time (allowing 10 days after the 60th day).

[19] This is in contrast with what found by Cervellati, Della Bina and Giulianelli (2005) that recorded no extra returns at the public access date, but statistically significant average abnormal returns before the date.

Table 4. Average abnormal returns in correspondence of the public access date

	Public access date					
	Upgrade			Downgrade		
Days	AR(%)	t	Sign	AR(%)	t	Sign
-15	0.0227	0.2123		-0.0041	-0.0528	
-14	0.1477	1.5824		0.0796	1.0857	
-13	-0.0527	-0.5040		0.0002	0.0017	
-12	0.1116	1.3200		0.0309	0.4126	
-11	-0.0089	-0.1097		0.1045	1.0757	
-10	0.0272	0.3229		-0.0085	-0.1164	
-9	-0.0055	-0.0669		0.0520	0.6565	
-8	0.0692	0.8334		-0.0439	-0.5859	
-7	0.1288	1.4028		-0.0556	-0.7947	
-6	0.0153	0.1836		-0.0921	-1.2246	
-5	-0.0494	-0.5729		-0.1009	-0.9988	
-4	0.0189	0.2074		0.0824	0.9736	
-3	**0.1524**	1.8265	*	0.0988	1.1076	
-2	0.1284	1.4295		0.0165	0.2182	
-1	-0.0799	-0.8910		0.0636	0.7033	
0	**0.1671**	1.8468	*	-0.0795	-0.9219	
1	0.0690	0.9289		**-0.1460**	-2.0162	**
2	**0.2217**	2.1501	**	-0.1095	-1.4883	
3	0.0181	0.2242		0.0572	0.7730	
4	-0.0761	-0.6792		-0.0153	-0.1945	
5	0.0187	0.2506		0.0531	0.7093	
6	-0.0449	-0.4546		0.0391	0.5108	
7	0.1630	1.4023		-0.0206	-0.2487	
8	0.1033	1.2308		-0.0047	-0.0578	
9	0.0393	0.4808		-0.1009	-1.1637	
10	-0.0122	-0.1663		**-0.1259**	-1.8153	*
11	0.0986	1.1859		0.0936	1.0649	
12	-0.0226	-0.2473		0.0540	0.6637	
13	0.0630	0.6958		-0.0743	-0.8312	
14	0.0458	0.4674		-0.1262	-1.5799	
15	0.0831	0.9751		0.0421	0.6211	

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

3.4 Empirical evidence on Cumulative abnormal returns

To verify if these recommendations really create value for investors we calculated cumulative abnormal returns on different time windows. 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]. Table 5 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 5. Cumulative Abnormal Returns for event study 1 and event study 2

		CAR					
		Report date			Public access date		
		CAR(%)	t	Sign	CAR(%)	t	Sign
Upgrade	[-15; -2]	-0.2658	-0.9838		**0.7057**	2.1000	**
	[-1; +1]	**1.3839**	12.1921	***	0.1561	1.2133	
	[+2; +15]	**0.5142**	2.4260	**	**0.6988**	2.1908	**
Downgrade	[-15; -2]	0.4303	1.4078		0.1597	0.5641	
	[-1; +1]	**-1.6443**	-13.6708	***	-0.1619	-1.2910	
	[+2; +15]	**-0.6601**	-3.1905	***	-0.2383	-0.9390	

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

For event study 1, the CAR on the window [-1; +1] is equal to 1.38% for upgrades and –1.64% 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 0.51% for upgrades and –0.66% 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 and followed this date, but only for upgrades.

From table 5 and figure 4, it is possible to notice an interesting trend before the report date. For downgrades, there is a positive CAR, even if not statistically significant, that seems to suggest that in the period just before the issuance of the report the stocks under review have increased in value, becoming overvalued and possible targets for downgrades.

The opposite happen for stocks that have received an upgrade, which price decreased before the report date, suggesting an undervaluation of those stocks that then are objective of positive recommendation. An alternative explation of this last effect is what in literature is known as “booster shoot” [Womack (1996)], i.e. the fact that analysts could deliberately upgrade those stocks that have recorded poor performances in the past, not because they are really undervalued, but just to support the price of the stocks of companies for which they want to maintain or create a positive relation with the management.

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

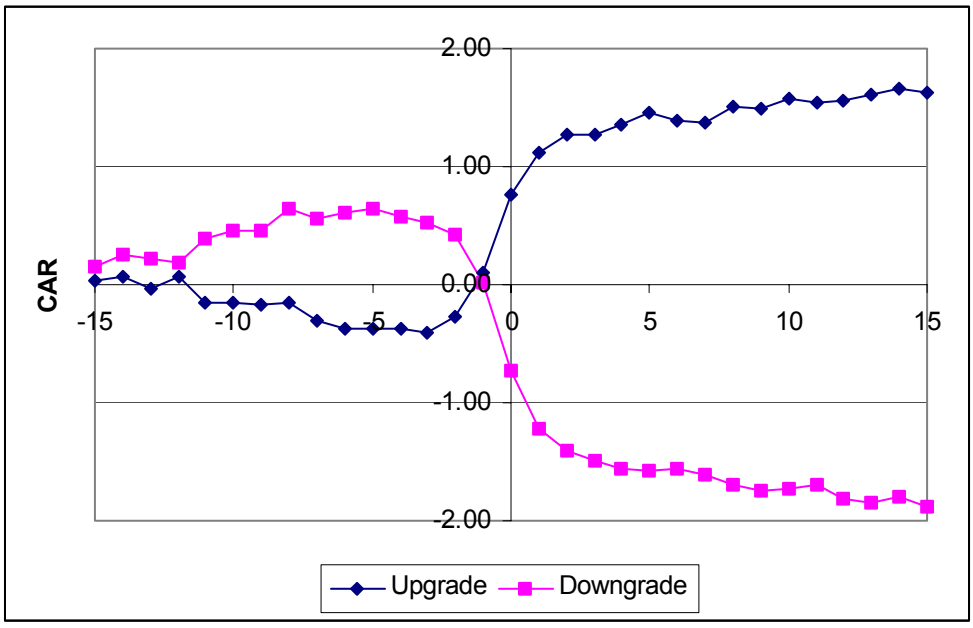
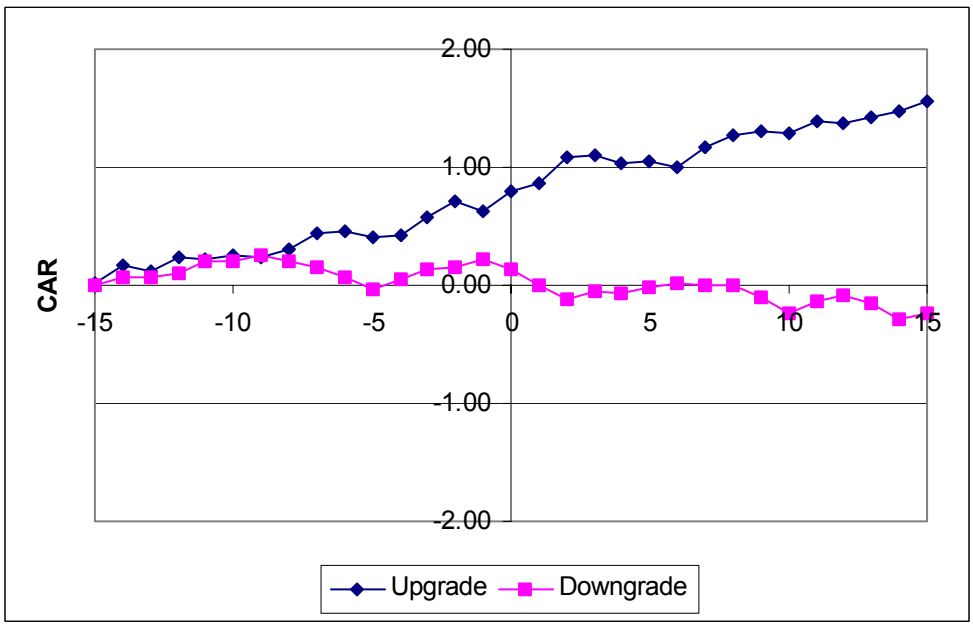


Figure 5. Cumulate abnormal returns in correspondence of the public access date



At the public access date, there is no abnormal reaction of the market, coherent with the hypothesis that the market correctly reacts at the report date, when the information is conveyed to prices through the tradings of analysts' private clients.

It is interesting, instead, to note how CARs are significantly different from zero in the period preceding and following the public access date in the case of upgrades.

The fact that CARs are statistically significant before the public access date seems to confirm that fact that the market reaction happens at the report date.

Positive CARs after the public access date suggest that there exists a post-event drift.

Table 6. Matrix of changes of recommendation (percentages in brackets)

CAR (%) [-1; +1]					
	Previous Rating				
Current Rating	Buy	Add	Hold	Reduce	Sell
Buy	**0.4107** (7.8829)***	**1.6605** (4.9768)***	**1.8745** (7.3315)***	**1.8038** (1.9911)*	**2.0266** (1.8423)
Add	**-0.8275** (-3.4845)***	**0.3161** (5.2686)***	**1.2887** (7.3496)***	**1.2126** (2.6115)**	**7.8226**
Hold	**-1.3978** (-7.1215)***	**-1.9959** (-8.6756)***	**-0.1680** (-3.3845)***	**0.9111** (3.3788)***	**0.2280** (0.4550)
Reduce	**-1.1868** (-1.0937)	**-2.8309** (-4.8750)***	**-1.8159** (-5.6853)***	**-0.3302** (-2.3417)**	**-1.6013** (-2.4731)**
Sell	**-2.4946** (-1.0953)	**-0.6056** (-0.1957)	**-1.4190** (-1.8884)*	**-5.0320** (-5.0207)***	**-0.8851** (-4.1588)***
Statistical significance: * = 10%; ** = 5%; *** = 1%					

Similar to the results of Stickel (1995), Womack (1996), Barber et al (2001) and Boni and Womack (2003) we find that cumulative abnormal returns for the three-day period around the report date is, in general, significantly positive for upgrades and significantly negative for downgrades (see table 6). Furthermore, for the set of analyst recommendations in the database, a reiteration of buy or add rating is accompanied by a significantly positive return, as expected, whereas a reiteration of hold, reduce or sell rating is associated with a significantly negative return.[20] In table 7 we focus on what we expect to be the recommendation changes having the greatest market impact, i.e. those from and to the extremes of rating systems. We therefore calculate the CAR on a three-days event window for added-to-buy, added-to-sell, removed-from-buy and removed-from-sell like Womack (1996). For added-to-buy we find a CAR equal to 1.78%, statistically significant, and greater than what we found for upgrades in general, as expected. With regard to added-to-sell we find a CAR= -1.97%, higher than what we found for downgrades.

Table 7. Cumulative Abnormal Returns for added-to-buy/sell and removed-from-buy/sell

	CAR	N	t	Sign
Added to buy	**1.7877**	469	9.0711	***
Removed from buy	**-1.2008**	539	-7.7191	***
Added to sell	**-1.9745**	85	-3.1676	***
Removed from sell	0.1981	60	0.5223	
Statistical significance: * = 10%; ** = 5%; *** = 1%				

[20] See for example Cervellati, Della Bina, Pattitoni (2005) for further evidence on the negative market reaction to hold recommendation in the Italian case.

In case of removed-from-buy, we find a statistically significant negative reaction equal to –1.20%, lower than the general result for downgrades, bur rather relevant. With regards to removed-from-buy, instead, we find a slightly positive reaction that, however, it is not significantly different from zero.

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 8 and 9, and in figures 6 and 7, both for upgrades and downgrades (part A and part B, respectively).
In correspondence of the report date (table 8), there are abnormal returns equal to 1.5810 for upgrades and 1.8838 for downgrades, respectively 58.10% and 88.38% 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.
While this result confirms what found in literature, the possible explanation can be different. Usually, two explanation are put forward to explain this result. The first refers to the fact that usually the percentage of downgrades is smaller than the one for upgrades, therefore the impact for the former should be higher. A second explanation has a "behavioral" nature, claiming that people react more heavily to negative news, therefore increasing trading after a downgrade. While, in our case, the behavioral explanation holds, the one referring to the percentages of upgrades versus downgrades does not, since the frequencies of occurring are almost the same.
If we compare the results found in the analysis of CARs, we can see that for downgrades there is a greater market reaction in the event window around the report date, that seems do not last thereafter, while the reaction in response to upgrades is smaller at the report date, but persisting.
With regard to the analysis centered around the public access date (table 9), we would like to highlight that from a statistical point of view there are abnormal volumes significantly above average but tha there is no peak at the public access date, seeming to suggest that the real reaction happens around the report date.

Table 8. Average abnormal volumes in correspondence of the report date

	Report date					
	Upgrade			Downgrade		
Days	AVR	t	Sign	AVR	t	Sign
-15	0.9820	-0.6499		**1.0782**	2.0879	**
-14	0.9768	-0.7981		**1.0829**	2.3183	**
-13	1.0071	0.1925		**1.1030**	2.7589	***
-12	**1.0696**	1.7383	*	1.0420	1.2331	
-11	1.0436	1.1294		**1.1169**	3.0727	***
-10	1.0498	1.3631		**1.1051**	2.2414	**
-9	**1.1239**	2.4337	**	**1.1359**	3.1409	***
-8	**1.0608**	1.6982	*	**1.2106**	4.2822	***
-7	**1.0706**	2.1857	**	**1.1579**	4.2386	***
-6	**1.1118**	3.1456	***	**1.2215**	5.4703	***
-5	**1.1601**	3.6616	***	**1.2852**	5.6207	***
-4	**1.1833**	2.9975	***	**1.3290**	6.1364	***
-3	**1.2281**	5.0318	***	**1.3444**	7.3406	***
-2	**1.2646**	6.4516	***	**1.5250**	7.6386	***
-1	**1.4244**	8.4956	***	**1.7420**	9.3953	***
0	**1.5810**	9.9892	***	**1.8838**	10.4839	***
1	**1.3746**	8.4342	***	**1.5231**	10.4103	***
2	**1.2635**	5.9050	***	**1.3634**	9.1046	***
3	**1.2181**	4.7212	***	**1.2854**	7.0626	***
4	**1.2131**	4.8473	***	**1.2445**	6.8534	***
5	**1.1859**	4.8947	***	**1.2393**	6.7505	***
6	**1.1946**	3.6526	***	**1.2377**	6.0232	***
7	**1.1667**	4.6200	***	**1.1447**	4.5684	***
8	**1.1825**	4.0268	***	**1.1137**	3.7684	***
9	**1.1530**	3.7398	***	**1.0758**	2.4643	**
10	**1.1449**	3.2426	***	**1.0738**	2.7895	***
11	**1.1281**	3.3893	***	1.0386	1.3732	
12	**1.0852**	2.6856	***	**1.0532**	1.9038	*
13	**1.0916**	2.5972	***	1.0465	1.6129	
14	**1.0915**	2.9005	***	1.0309	1.0873	
15	1.0075	0.2868		**1.0757**	1.9231	*

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

Figure 6 (part A). Average Abnormal Value around the report date - Upgrades

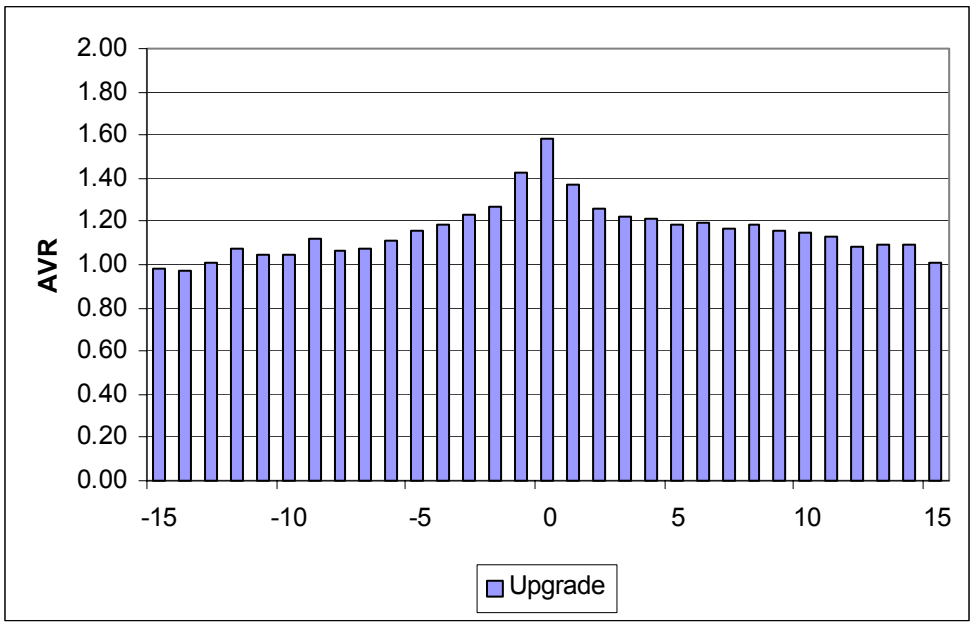


Figure 6 (part B). Average Abnormal Value around the report date - Downgrades

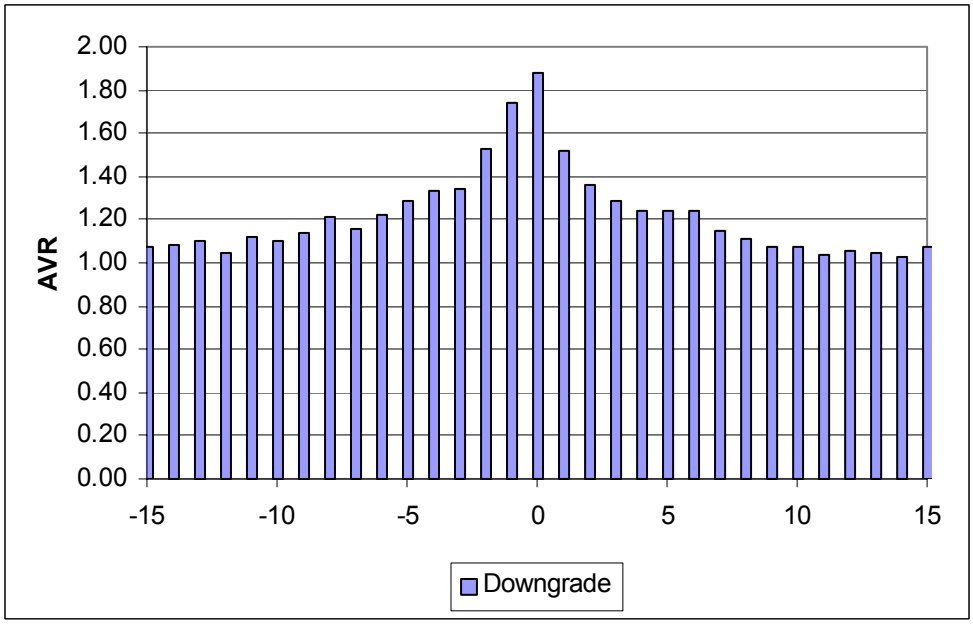


Table 9. Average abnormal volumes in correspondence of the public access date

	Public access date					
	Upgrade			Downgrade		
Days	AVR	t	Sign	AVR	t	Sign
-15	1.1717	1.4647		1.0880	1.4300	
-14	**1.3600**	3.1336	***	1.0036	0.0556	
-13	**1.3657**	2.4308	**	1.0738	1.2195	
-12	**1.2244**	2.2347	**	**1.1767**	2.9026	***
-11	**1.1216**	1.7747	*	**1.2252**	3.3259	***
-10	**1.2193**	1.7756	*	1.0918	1.1598	
-9	1.0676	1.0800		1.1119	1.5023	
-8	0.9711	-0.4765		1.0941	1.5474	
-7	**1.1827**	2.5267	**	**1.1384**	2.5377	**
-6	**1.1213**	2.3517	**	**1.3310**	2.5139	*
-5	**1.0868**	1.7998	*	**1.2869**	2.9368	***
-4	**1.2853**	3.0844	***	**1.3983**	2.7728	***
-3	**1.2108**	3.2495	***	**1.3338**	4.0382	***
-2	**1.2384**	3.3427	***	**1.2997**	3.7476	***
-1	**1.2099**	3.2140	***	**1.3485**	4.9692	***
0	**1.2437**	2.7533	***	**1.2885**	3.9921	***
1	**1.1815**	2.8060	***	**1.2091**	3.8348	***
2	**1.2873**	3.8159	***	**1.1210**	1.9660	*
3	**1.1851**	2.7443	***	**1.2237**	2.9618	***
4	**1.2085**	1.7271	*	**1.2103**	3.2662	***
5	**1.1945**	2.2404	**	**1.2722**	4.1562	***
6	**1.1622**	2.1250	**	1.0672	1.4325	
7	**1.2507**	1.9999	**	**1.1270**	2.2213	**
8	**1.2309**	1.8645	*	**1.2106**	3.1618	***
9	1.0842	1.4328		**1.2437**	3.5262	***
10	1.0536	0.8521		**1.1296**	2.3312	**
11	1.0259	0.4749		1.0970	1.7647	*
12	1.0737	1.3519		1.1076	1.7544	*
13	1.0462	0.7537		**1.1984**	3.2152	***
14	1.1247	1.3697		**1.1697**	3.1362	***
15	1.0036	0.0703		**1.1143**	1.9032	*

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

Figure 7 (part A). Average Abnormal Value around the public access date - Upgrades

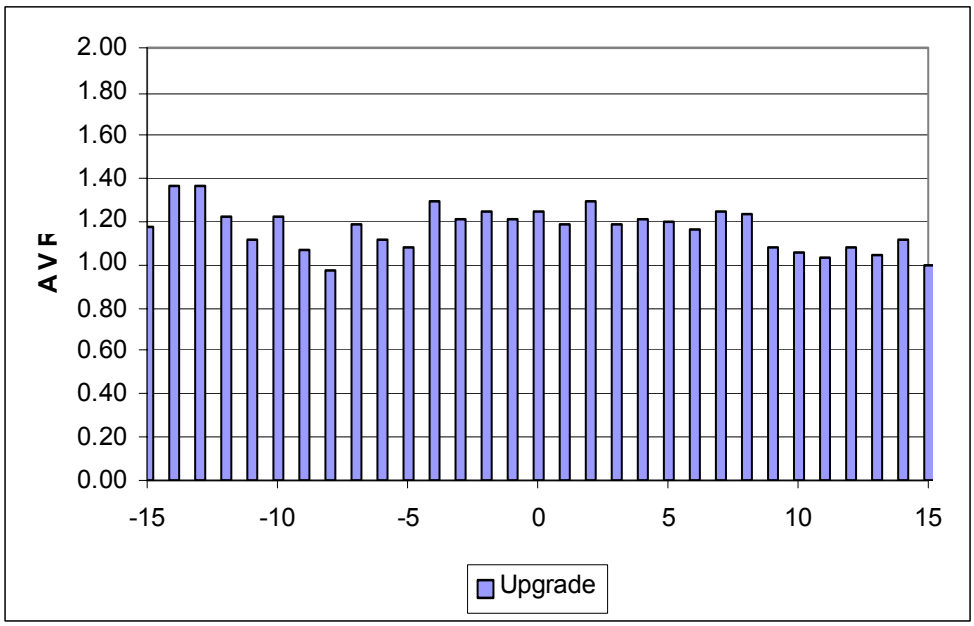
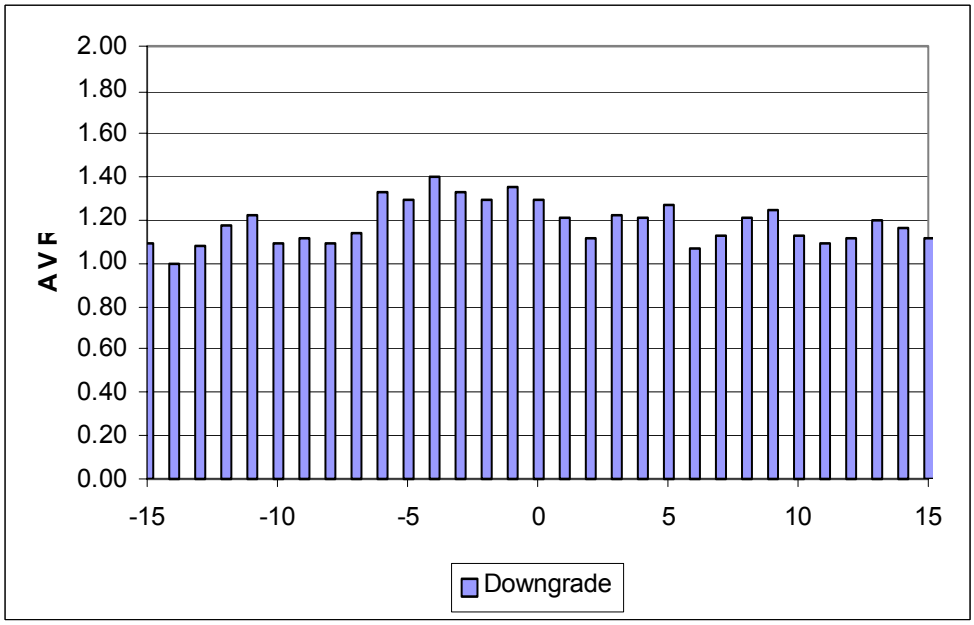


Figure 7 (part B). Average Abnormal Value around the public access date – Downgrades



3.6 Comparing cumulative abnormal returns and abnormal volumes

In what follows we present a comparison between cumulative abnormal returns and abnormal volumes in correspondence both at the report and public access date and for upgrades and downgrades.
Figure 8 shows the results obtained for event study 1, in correspondence of the report date for upgrades. It is evident that around this date, following an upgrade, there is an increase of abnormal volumes as well as of cumulative abnormal returns, then there is a drift in the following period.

Figure 8. Cumulative Abnormal Returns (CARs) and Average Abnormal Volumes (AVs) around the report date in case of upgrade

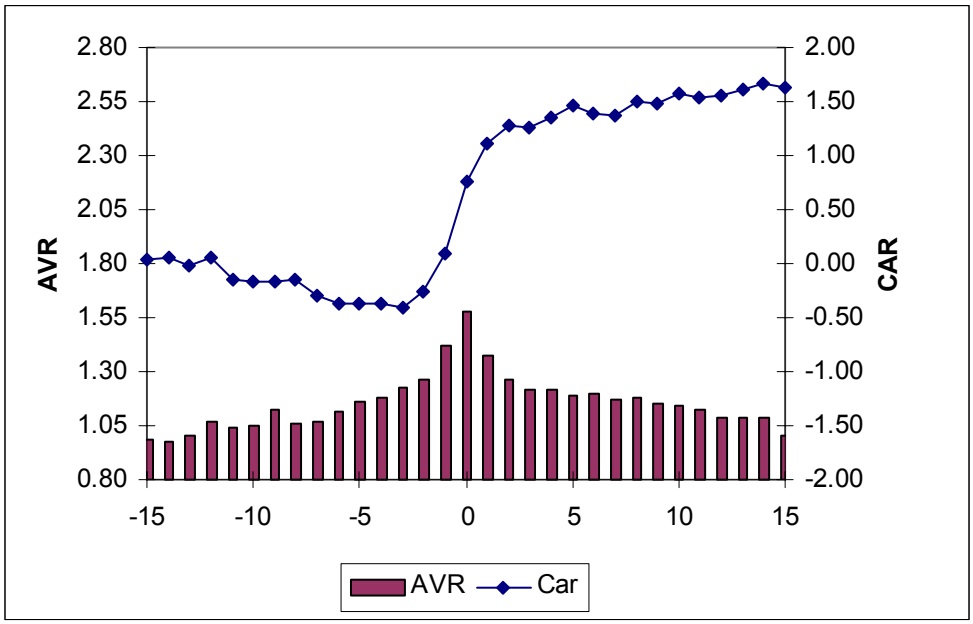


Figure 9, instead, presents the market reaction around the report date, following a downgrade. It is evident that CARs and abnormal volumes are significant around the report date. As we have shown in the previous analysis, in fact, the market reaction is statistically significant in both cases, but the magnitude for upgrades is lower if compared to downgrades, while it lasts longer.
Figure 10 presents the results of the event study 2, relative to the public access date in case of upgrade. While from a statistical point of view there are abnormal volumes significantly above average in the period around the date of publication of the reports, there is no peak at the public access date. Since we are doing our calculations with regard to public access date using just one year and a half of data, our results should be taken with caution. In other words, it is possible that we find significant abnormal volumes due to specificity of the period considered and to the low number of data. Figure 11 shows the results in case of downgrades.

Figure 9. Cumulative Abnormal Returns (CARs) and Average Abnormal Volumes (AVs) around the report date in case of downgrade

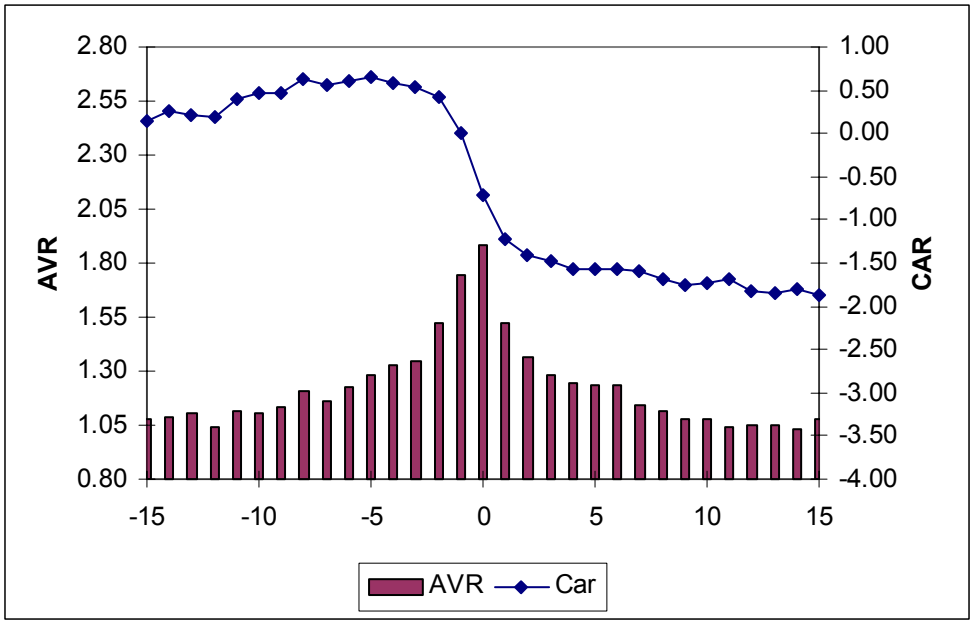


Figure 10. Cumulative Abnormal Returns (CARs) and Average Abnormal Volumes (AVs) around the public access date in case of upgrade

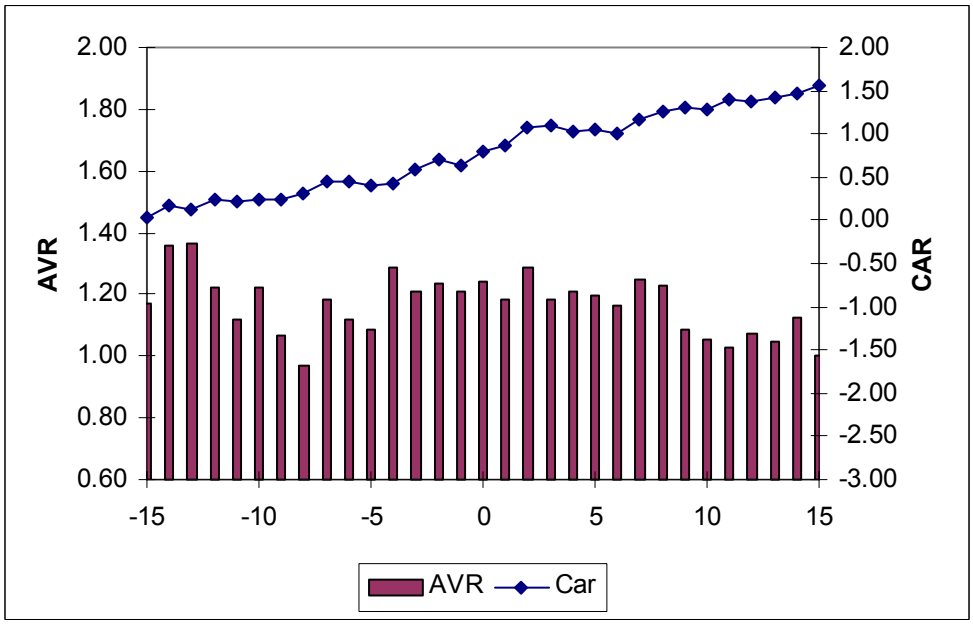
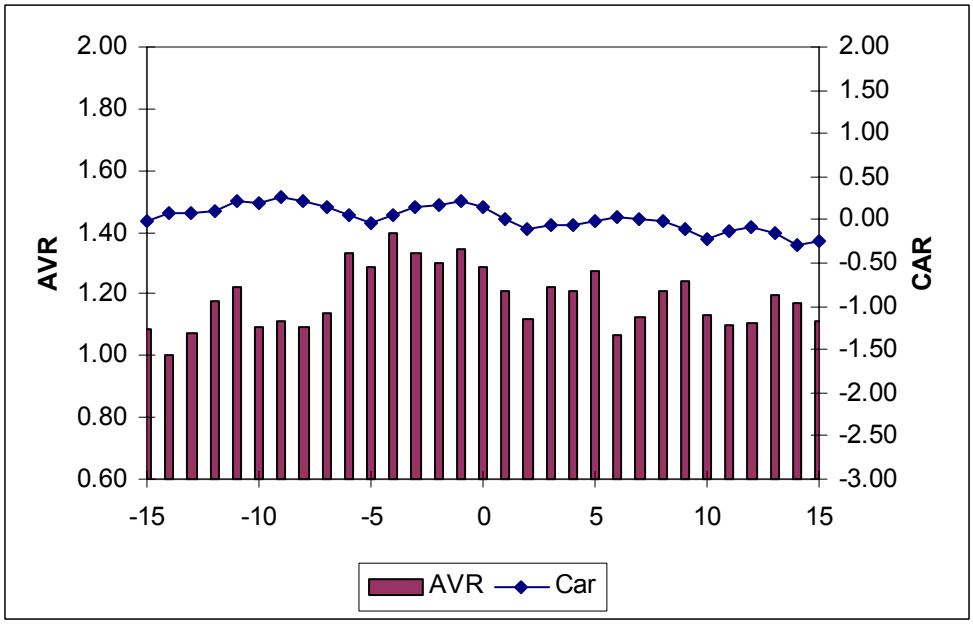


Figure 11. Cumulative Abnormal Returns (CARs) and Average Abnormal Volumes (AVs) around the public access date in case of downgrade



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 information to the market, and therefore if they indeed have value.

In this respect we have analyzed the impact of the issuance of reports on prices and quantities of the stocks recommended by analysts, calculating both extra returns and abnormal volumes associated with the upgrades and downgrades, but also cumulative abnormal returns with regard to each category of rating, i.e. also considering reiteration of the same rating.

Italy is a very peculiar case since it requires analysts to send the report to the Stock Exchange Commission the same day they issue it to their private clients. The intermediaries issuing reports are obliged to submit the reports within sixty days to the Stock Exchange, that make them available on its website.

About one third of the reports are issued beyond the period allowed by regulation, seeming to suggest a violation of law. A good part of the reports is however sent the same day of issuance, or within a week, and another relevant part just some days before deadline allowed by law.

The main market reaction takes place in correspondence of the diffusion of the report to the analysts' private clients, stabilizing around normal values in the following period for downgrades, while lasting in the post-event window for upgrades. At the report date average abnormal returns are statistically significant both for upgrade and downgrade. However, the reaction to downgrades is greater than the one for upgrades.

Since the percentage of revisions upward and downward in the sample is almost

the same, we can not argue that the greates reaction to downgrades is due to a lower frequency of downward revisions, rather due to the fact that for upgrades the reaction last longer.
This result is confirmed analyzing volumes: an upgrade generates statistically significant abnormal volumes that, however, are lower than the ones recorded for downgrades. In other words, it seems to suggest that we observe an higher market reaction, both in terms of extra-returns and abnormal volumes for downgrades, that however is short-lived, while for upgrades there is a still significant market reaction, but lower in magnitude and long-lasting.
Abnormal returns and volumes are present not only before the official diffusion of the report to the market, but also before the report date. We claim two 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 a part of recommendation changes can be concentrated around earnings announcements and that those news could explain a great deal of the abnormal return associated with the recommendation change.
The future research should investigate if price sensitive news in correspondence of the recommendation changes could affect the results deriving from the present analysis.
It remains to be investigated the investment value for analysts' private clients of investment strategies that use portfolios based on recommendations or average consensus, exploiting the difference between the report date and the public access date.

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