PROPERTIES OF EQUITY ANALYSTS REPORTS AND MARKET REACTION

ELISA CAVEZZALI, UGO RIGONI

ABSTRACT

The paper collects and classifies the properties of more than 4600 analysts reports on Italian listed stocks in order to assess their impact on market reactions. The paper innovates the most common approach in the literature which resort mainly on information available on commercial database, such as the final recommendation and the earning forecasts. The findings show the market overlooks most of the properties it has been possible to collect and treat statistically. A part from that, the market looks at different reports properties depending on which are their final recommendation. When the reports make positive recommendation the market is not influenced at all by their content, while it is important their time issuing. The market reaction is stronger if the reports are issued when the frequency of the reports is lower. On the other hand, the reports with neutral and negative recommendations share the same features. The market reaction is stronger when the evaluation methods used to get the fair value estimation are elicited. This result indirectly confirms other previous studies. It could be explained through the disposition effect, that is the which tendency of investors to keep the stocks where they are suffering losses. The negative advice could reach investors both who are gaining and who are losing. While the former ones will be willing to sell, the latter ones, before selling the losing stocks, will require well documented reports with convincing arguments supporting the general advice.

EFMA classification codes: 350; 330; 370.
Keywords: Security analysts; Reports properties; Stock evaluation; Market reaction.

Elisa Cavezzali, University of Venice – Department of Business Economics and Management, San Giobbe - Cannaregio 873 – 30121 – Venice (Italy), elisa.cavezzali@unive.it; Sir John Cass Business School – City of London - 106 Bunhill Row – London - EC1Y 8TZ – London (United Kingdom), Elisa.Cavezzali@cass.city.ac.uk

Ugo Rigoni, University of Venice, Advanced School of Economics and Department of Business Economics and Management San Giobbe – Cannaregio 873 – 30121 Venice (Italy), rigons@unive.it.

1. Introduction

The financial reports are researches regarding listed stocks issued by investment banks or brokerage houses for their private clients and then published in the capital markets. The financial analysts use an heterogeneous set of information concerning either the analyzed firm features and the economic system to get, by employing one or more evaluation models, the estimate of the firm value and an investment recommendation.

The financial services industry invests a large amount of money to analyze stocks since its analysis can be very useful for many investors who must take important decisions in a short time. Many studies have empirically analyzed the market reaction to financial reports. A common feature of the existing researches is that they are usually based on the final content of the reports (recommendations and target prices) or on the forecasts of different aggregations (for example, the earnings), usually taken out by commercial dataset (e.g. Womack [1996], Gleason and Lee [2000], Mikhail *et al.* [1997]) or even from the financial analysts' reports themselves (see Asquith *et al.* [2005], Belcredi *et al.* [2003] or Cervellati *et al.* [2006]). Our study radically innovates these approaches because it's based on a more in depth analysis of the reports' properties. The most innovative contribution of the study is to insert some new dimensions, besides the final recommendations, among the variables that can explain the market impact of the reports. This purpose has been pursued analyzing how the reports are made and which information and evaluation methods are used. Instead of using a commercial dataset, we developed a unique one obtained through the careful reading and the deep analysis of a large number of reports (more than 4600).

In order to analyze the market reaction to the content of the reports, we have performed an event study. This tool allowed us to study whether the abnormal return recorded in correspondence of the reports issuing was depending on the information content of the reports.

Our results show the market overlooks most of the properties we have been able to collect and treat statistically. For instance the kind of the evaluation methods used, which can be alternatively based on the fundamental analysis or on the market ratios, doesn't seem relevant for the market. The insignificance of the most part of the estimated coefficients could be dependent either on the numerous data missing of some variables, causing a decrease in the sample size and blunting the effects on the market reaction of some variables, or on the misspecification of some variables used.

Apart from that, an interesting point is that the market looks at different report properties depending on which is its final recommendation. In case of reports with a positive recommendation the market is not influenced at all by the content of the report, while it is important its time issuing. The investors are used to get positive recommendations and they don't wonder how the analysts build such investment advice which are after all very common. The market reaction is stronger if the reports are issued in what we called the cold months, that is, when the frequency of the reports is lower. We argue this depends on the greater informative value of "bold" reports, issued out of the herd. In period of high frequency of the reports, these documents just remark some news and information already public and so discounted by the market.

On the other hand the reports with neutral and negative recommendations share the same features: this similarity is not surprising since usually the market assimilates the neutral reports to the negative ones, reacting negatively. In this case, similarly to other studies' results (Hirst *et al.* [1995] and Asquith *et al.* [2005]), the market reacts strongly when the evaluation methods used to get the fair value estimation are elicited. We argue this result trough the disposition effect. According to this theory, the investors recommended to sell losing stocks would require more information to be convinced to sell.

The paper is organized as follows. Section 2 discusses the main results obtained by the literature related to this research. Section 3 presents the theoretical framework of the work. Sections 4 and 5 present the dataset and the empirical framework used. Section 6 reports the results of the event study on the dissemination of research reports, with a particular focus on the content of the financial analysts' reports. Section 7 comments the results and concludes the paper.

2. Literature review

This research is related to two main research fields well developed in the literature, the study of the properties of analysts' reports and of their information value for the market.

However, with respect to these research fields, the study aims to introduce some important innovations, starting from the approach here adopted to the study of financial analysts' issues. Unlike the most of the previous studies, it will carry out the research questions from an in depth reading and analysis of the reports' content, instead of using the few information contained in the traditional commercial dataset.

So far the study of the properties of the reports, which examines the relevant information for evaluation purpose and how such information are processed by the analysts, has been carried out resorting to two main methodologies: submitting questionnaires or making interviews and performing the content analysis, a methodology based on software programs allowing a quick, even if not flexible and superficial, filing of the reports' content. These researches have shown that analysts don't limit their studies to accounting information (the so called financial reports) but they look for and use many others than accounting information (Hill and Knowlton [1984], Previtz *et al.* [1994]). The research on how information are processed to get the final recommendation is focused mainly on which evaluation methods are used to calculate a company's fair value. Even if there is a well developed literature on the issue of the evaluation of a company's fair value, there are still few studies trying to understand what are the evaluation methods most used by analysts. The research by Ambrosetti Stern Stewart Italia [2002], through the questionnaire method, has shown that Italian analysts prefer these methods: the discounted cash flow, the market ratios and the Economic Value Added (EVA™). The importance of heuristic methods, such as the market ratios, is confirmed also by researches directly analyzing the reports' content and not restricting their scope to Italian analysis (Bradshaw [2002], Demirakos *et al.* [2004], Asquith *et al.* [2005], Bertinetti *et al.* [2006] and Cavezzali [2007]).

With regard to the literature studying the information value of reports, it has been well documented that the research reports are worth and can improve the market efficiency if they convey new information to the market, assuring a transparent and homogeneous price sensitive information disclosure. The most part of these studies uses the event study methodology to test the market reaction to the report issue and to analyze the market efficiency to incorporate new information, usually represented by recommendations, target prices, earnings forecasts or their changes. As we will discuss specifically in section 5, the abnormal returns are the measures of the impact of these elements on the company prices. For instance, historically, Givoly and Lakonishok [1980] or Griffin [1976] have documented relevant abnormal returns at the same time as earning forecast revisions were released. More recent studies have mainly focused on the analysis of a possible link between the forecast revisions and the short term abnormal returns. Lys and Sohn [1990] have found that each analyst's forecasts is price informative, despite the fact they are preceded by other types of disclosures, including the forecast revisions of different analysts. Stickel [1992] highlights that analysts members of II-All American team issue more accurate forecasts having a more relevant impact on short term pricing. Gleason and Lee [2000] analyze not only the

immediate impact of the forecast changes on prices, but extend the time horizon of their monitoring up to two years after the time of the revision and detect a persistent price drift in each of the two monitored years.

Athanassakos e Kalimipalli [2004], instead, examine the relation between the dispersion of earning forecast and the future volatility of the stock return, once documented the existence of a positive relation between these two factors. More precisely, as opposed to other studies mainly focused on specific events (earnings release, for example), Athanassakos and Kalimipalli assume that there is a continuous flow of information resulting in a constant influence on market pricing from analysts' monthly forecasts.

According to Francis and Soffer [1997], investors reactions to earnings forecast changes also depend on the recommendations released by the analysts on the stock. From a joint analysis of the earning forecast revision/recommendation changes and the market response, measured as a higher return between the previous and the following day of the release, the authors prove their hypothesis. Furthermore, the market responds more strongly to earnings forecast revisions accompanied by buy rather than hold or sell recommendations This is consistent with the hypothesis that, because analysts bias recommendations upward, investors turn to earnings forecast revisions for more information when analysts issue buy or strong buy recommendations. Hirst *et al.* [1995] make the opposite argument. Through an experiment using students, they argue that only when recommendations are unfavourable or unexpectedly revised downward the investors will expend the effort to analyze any of the information in the report and impound that information in their decisions. Jurgens [2000] focuses his own analysis only on the value of the stock recommendations and finds they have some impact on the intra-day stock returns (within 15 minutes from the recommendations release) and the daily ones (3 days returns are calculated), taking into account the contemporary release of other public news, if any. Registering also a reduction of intraday returns volatility, the author states that the analysts information is by far more effective compared to public news.

Frankel *et al.* [2002] argue that the information contents of the reports, (measured as the average of prices reaction to analysts forecast revisions and dependent, according to the model used, on the demand and supply of the information and on the number of analysts following a specific firm) increases with the increase in volatility volumes and returns. Reports seem more effective when bad news are coming rather than good news. The investors reaction seems to be neither in excess nor limited. The short term reaction, in fact, is subsequently not inverted.

Womack [1996] is particularly focused on the investment recommendations of the US market. Examining the time immediately before and after the recommendations changes, extra returns are registered after the recommendations. The stocks subject to recommendation changes record a mean abnormal return significantly different from zero and asymmetric according to upgrade (2.4%) or downgrade (-9.1%) recommendations. This asymmetric behaviour is consistent both with the high frequency of upgrades and with the issuing cost of negative report.

Barber *et al.* [2001] take a step forward and measure the returns arising from the strategies built on the basis of analysts' recommendations. Elgers et al [2001] find a delayed prices reaction in the capital markets if the information disclosure is in the analysts' earnings forecasts or about the value. This delayed reaction is bigger if the analysts' coverage is low and in the subsequent quarter after the earnings announcement. More recently, Jegadeesh et al [2004] study the recommendations (and their revision) value. They find that the consensus recommendations, if considered jointly to other public information, do not have more informative value for all the stocks. The stocks with high price momentum, earnings momentum or volume have good returns after favourable recommendations while the stocks with low levels of these variables underperform. This is likely because more favourable recommendations cause a delay in the prices adjustment to the fundamental values.

Belcredi *et al.* [2003] focus instead on the Italian market and measure the short term impact on the market caused by changes of the analysts recommendations taken directly from the reports published on the Borsa Italiana S.p.A. website. Using a 3-day window, they measure an abnormal return of 2.52% for upgrade and -2.63% for downgrade. The authors find evidence for an anticipated market reaction, due either to the disclosure of price sensitive information or to a leakage of information in the days preceding the diffusion of the research. After the report public access date, they don't find any statistically significant abnormal returns or volumes in the market, documenting that the market reacts when new information is conveyed and not when formally the report becomes public.

Cervellati *et al.* [2006], analyzing the Italian listed companies, in correspondence to the report issuing date find a mean abnormal return of 0.65% for upgrade and -0.82% for downgrade. The *CAR* is -1.64% for downgrade and 1.38% for upgrade in a 3-day window centered on the report issuing date. As in the Belcredi *et al.* [2003] study the authors document abnormal return during the previous days before the report issue.

While the studies mentioned above evaluate the market reaction to analysts' recommendations and earnings forecasts, Brav and Lehavy [2003] observe the short term

reaction and the long term trends of target prices and the related stock prices, jointly monitored. The authors observe that the target price information value is independent by the recommendations. In correspondence to unchanged recommendations, but significant target price changes (for instance, 32% increase respect to the previous report issued by the same broker) the market record significant abnormal return (the cumulative abnormal return (CAR) 3 months after the report issue is about 3.50%).

Our work is also related to recent researches demonstrating that the market reaction depend also on some features of the analysts or of their forecasts, such as: the expected accuracy and timely of forecasts, the analyst's proven experience, the broker size, the forecast frequency (see Stickel [1992], Abarbanell *et al.* [1995], Mikhail *et al.* [1997], Clement [1999], Jacob *et al* [1999], Park and Stice [2000], Clement and Tse [2003]). It is interesting to underline also that the reputation of the analysts affects the speed of the reaction of prices to the new forecasts (Gleason and Lee [2003]). In the case of forecasts issued by famous analysts, such as the ones of the "*Insitutional Investor All-Stars*" or of the "*Wall Street Journal Earnings Estimators*", the market reaction is immediate. Moreover, for companies covered by few analysts, the reaction is weak and less complete than the one which takes place when the companies are covered by a large number of analysts (Brennan *et al.* [1993], Elgers *et al.* [2001], Gleason and Lee [2003]).

Even though the literature reminded above has given important methodological foundations to develop this research, its results are not directly comparable to that ones expected in this study. As shown, the most part of the studies measure the value relevance just of some of the elements of the reports (recommendations, target prices and earnings forecasts), without considering the in depth analysis of their content and properties.

As far as we know, to this day, there are only two studies similar to our work, taking into consideration the content of the reports (Demirakos *et al.* [2004] and Asquith *et al.* [2005]). The former one is relevant for its approach, even though it's different by research issues. Basically it is a descriptive analysis of a very small sample of 104 reports about the use of the evaluation models that analysts use to convert the forecasts into estimates of firm value.

The latter one is on the contrary more related to our work because to analyze the market impact of the reports, it uses some other elements of a report, such as evaluation methods used and justifications given to recommendations, going beyond the usual information used by the previous studies. The main finding of this research is that both target prices and analyst justifications are important in explaining the market's reaction to analyst

reports. The investors, in fact, pay more attention on the content and on the justifications underlying the analysts' recommendations in downgrade cases, while they look more at the target prices with reiterations and finally, for the upgrade, none of the elements are statistically important. With regard specifically to the evaluation methods, the authors fail to observe any systematic association between the valuation method used by the analyst and either the market's reaction or the probability of achieving a price target.

Anyway, even with regard to such studies, our work definitely takes a wider perspective both from an horizontal elaboration level and from a vertical one. With regard to the first level, for instance, our project will analyze a dataset composed by more reports than that ones (a few more than 1000) analyzed by Asquith *et al.* [2005]. With regard to the second level, on the contrary, we are providing a richer and multidimensional image of reports properties, not restricting our search to the evaluation methods used, but collecting and classifying other important information, such as: the information kind, the level of analysis elaboration, the hierarchy of the evaluation methods (whenever the analyst uses more than one technique), the estimation parameters and testing the information value of these elements for the capital market.

3. Theoretical framework

Even though the literature about financial analysts have contributed to understand many important aspects about the financial analysts' output, many overlooked points still remain about both the evaluation process followed by the analysts and the effects produced on the market.

Reports are a very heterogeneous set both by content and structure, not only by forecasts and recommendations and they could be distinguished by different levels of elaboration. In all the reports, in fact, it's recognizable a "minimum content", represented by an investment recommendation, a target price and an earnings forecasts table. Usually, this basic framework is then enlarged telling facts and events characterizing the evaluated company or the reference economic background. Unfortunately it is not always possible to understand how the analysts get the fair value estimation. In some reports, which are characterized by a maximum level of opaqueness, it's impossible to understand both the process and the relevant information used in the analysis.

Many studies have already tested empirically the market impact of the financial reports. For instance, Womack [1996], Brav and Lehavy [2002] and, for the Italian market, Cervellati *et al.* [2006] (see section 2 above). All these researches are based just on

investment recommendations, without considering the motivations underling the recommendations and their role in the capital market.

The dataset we used (see section 4 below) on the contrary allows us to analyze more properties of the reports and to understand whether knowing the evaluation methods used by the analysts is relevant for the investors.

Similarly to Asquith *et al.* [2005], our main issue is to study if the market does care about the content of a report, how the analyst gets his recommendations.

The first and the second hypotheses we will test are:

H1: Does the content of reports matter for the investors?

H2: Does the market care about the evaluation methods used by the analysts? Do the different evaluation methods have different value for the investors?

If the methods are relevant, we expect to record different stock price reaction in correspondence to either different kind of reports (with/without an explicit method) and different evaluation methods.

We classify the evaluation methods in two main categories:

a) fundamental methods, such as net asset methods (algebraic sum of assets' and liabilities' market values), financial methods, earnings-based methods and composed methods;

b) market ratios methods, such as price earning, price to book value and their extensions.

More details on these methodologies can be found in Table 2. We resorted to this classification because the two groups are based on a different "working logic". Different from fundamental analysis, the market ratios methods require an active market making fair prices (market is always right). On the contrary, a fundamental evaluation could be done without a market.[1]

In practice, in this study, fundamental analysis is defined as a five-step process (Penman, [2001]):

1. Knowing the business (strategic analysis).
2. Analyzing the information (accounting and non-accounting information).
3. Specifying, measuring and forecasting the value relevant payoffs.
4. Converting the forecast to a valuation.
5. Trading on the evaluation.

[1]Actually the discount rate and the market risk premium, basic fundamental methods elements, require an active market.

Another important point we will take in consideration is about the timing in the report issue. The reports are worth just if they have some original information, not yet public. The time factor is relevant: a report is considered as informative only if it's quick in signalling some important change in the company. Analyzing the temporal distribution of our dataset, we noticed that the brokers are more active in issuing reports during some months a year (March, May, July, September and November) in correspondence to some crucial company events, for instance, stockholders' meetings, decisions about earnings distribution, balance sheet ratification, publication of quarterly or half-yearly results and so on.

Insert Table 1

So, we defined as "hot" these five months, to underline the high brokers' productivity, while we classified as "cold" the remaining months of the year and we tested if the reports issued in the two different periods have different informative value. Therefore the third research hypothesis is:

H3: Can the timing of the report issuing explain a different market impact?

In the "hot" period there is plenty of information about companies which could weaken the information value of the reports. If this conjecture makes sense, the reports issued in cold months will cause a stronger market reaction.

4. Dataset

In this section there is an accurate description of how the dataset has been composed because this is one of the original features of this work compared to the most part of the previous analysis.

Unlike most of the works available in the literature, this research is based on some elements characterising the reports, taken directly from these documents, with a careful and in depth reading. This has required the collection of the reports issued by the analysts, because it is not enough to process data contained in commercial databases, collecting earnings forecasts and analysts recommendations (e.g., I/B/E/S, First Call), but not providing the additional information supporting the evaluation procedure (such as accounting forecasts, evaluation methods, qualitative analysis, actualization rates or market risk premium used, other justifications).

For our purpose we have taken advantage of the law prescription imposing to brokers to deposit at the Italian Stock Exchange the reports issued on Italian listed companies. In this

way, the original reports are available on the web (www.borsaitalia.it) from where we have downloaded the files and coded by hand all the available information of each report.

Since a report is a complex document, analysis methods based on the content analysis would not be useful. These methods allow for a quick content classification by software applications on sale (with regard to content analysis applied to small samples of financial analysts, see Previts *et al.* [1994], Rogers *et al.* [1997], Breton and Taffler [2001]). Performing them we would have had a too strict and trivial codification criterion, essentially based on the words used in the document, but unable to capture the complex observations and valuation procedures that, with multiple declinations, form a report.

The complete dataset is composed by 4603 reports published in the Italian Stock Exchange website, issued in relation to 28 firms listed and included in the Italian *MIB30* index[2], during a four-year period, from 2000 to 2003, by 50 different investment banks or brokerage houses and covering 4 industries (banking, utilities, insurance and manufacture)[3].

We have classified many data such as: the report type (for instance, update vs new analysis) and size, the issuer's name, the investment recommendation, the target price, the risk premium, the actualization rates, the time horizon of the forecasts and the evaluation methods used. The variables singled out can be classified and summarised as in Table 2.

Insert Table 2

Some of the data were easy to find, while the identification and classification of others have been more difficult. This is particularly important when considering both the overall evaluation methods used in the reports and the identification of the main one. Sometimes analysts use at the same time two or more methods to evaluate a firm. Wherever possible, we tried to identify the main evaluation method, that is, the one which the final recommendation relies on more deeply. A striking result is that in about the 70% of the reports considered (n=3299), it has not been possible to identify the evaluation method used by the analysts or to understand the main one. This means that in the most part of the cases the investors do not know either the main evaluation methods or the parameters used by the analysts to make their investment recommendations.

[2] *MIB30* was the index of the first 30 largest Italian caps.
[3] However, in order to perform the event study, the reports actually used have been reduced to 4573 because of the length of the estimation window used to assess the expected value of the returns (see section 5).

Looking at the 1344 remaining, the evaluation methods have been based on fundamental analysis (56.47%) while the market ratios approach has been used as main evaluation method in more than 40% of the total reports.

With regard to the recommendations, since we refer to the original recommendations issued by the securities houses in their reports, a particular caution was required in the classification. Some analysts use a standard scale (i.e., "buy", "hold" and "sell"), someone use a slightly different terminology (e.g., "neutral" or "market perform" instead of "hold"). Others use a larger scale from "strong buy" to sell, or even more complex scale with recommendations like "reduce" (between "hold" and "sell") or "add" (between "hold" and "buy"). Not every firm explicitly declares the rating system it follows and the precise meaning of a recommendation.

In this study the investment recommendations have been classified in 4 categories: positive, negative, neutral and not classifiable. As shown in Table 3 and consistent with the previous literature about the analysts' optimistic bias (see e.g. Dugar and Nathan [1995], Michaely and Womack [1999], Darrough and Russel [2002] or De Bondt and Thaler [1990]), the most part of the recommendations are positive (more than 50%), than neutral (34.62%). There are negative recommendations just in few cases (about 10% of the total).

Insert Table 3

Whenever possible, to classify the evaluation methods, we used a particular logic not to loose information through the classification. We started from the traditional and theoretical ranking proposed for the evaluation methods[4], but I personalized it and catalogued also some additional specifications about each kind of method. For example, we classified as "earnings-based method": the Discounted Shareholder Profit (DSP), the Discounted Earnings (DE), but also two heuristic method named Warranty Equity Valuation (WEV) and Required ROE (RR)[5], while we called "financial method": the Dividend Discounted Model (DDM) and the Discounted Cash Flows (DCF). Instead, we named as "composed models" the EVA and the patrimonial-earnings based method. With regard to the market ratio methods, we considered differently two approaches: a "naïve" approach when the analyst compares the companies'

[4] The reference is about the traditional evaluation models classification: net asset methods, financial methods, market ratios methods and so on (see Damodaran [2001] or Copeland *et al.* [1996].

[5] Warranty equity evaluation method establishes that the value of equity (E) is given by this formula: $E = (ROE - g) / (COE - g) \cdot P/BV$, where ROE is return on equity, g is long term growth rate, COE is the cost of equity and P/BV is price to book value. ROE required is the same of IV, but g is equal to zero.

average ratios "one by one" and a "sophisticated" one if the financial analyst compares two market ratios at the same time, using a simple linear regression. In both cases we wrote down the kind of ratios used for the valuation[6]. We catalogued the qualitative methods as well, that is, the SWOT (Strength, Weakness, Opportunities and Threats) analysis.

It must be underlined that in this way, we set up an original and unique analysts reports' classification criterion based on a set of rules minimizing the subjectivness[7].

Table 4, in panels A-B-C-D, presents frequencies' summary of reporting for several of the data we collected from each report. The frequencies reported in panels A-B-C-D are organized by "who" issued the report, "when" it was issued, "what" firm was evaluated and "how" it has been evaluated on the whole. Panel E focuses on the frequencies of the reports with "main method".

Insert Table 4

The reports' dataset is quite heterogeneous since we collected all the available reports in the selected period, without any other particular inclusion criteria.

5. Empirical framework

In order to test the informative value of the reports and their content, we performed an event study. This methodology allows for verifying the market efficiency in incorporating new information, measuring the effects on the stock return of the event in correspondence to the event date, that is, the report issue date. In Italy, this corresponds, by definition, to the date the information is made available to brokerage firms' clients.

The market reaction to the report disclosure depends on whether the reports convey new information. If they convey new information and the market is efficient, there should be stock abnormal returns quickly disappearing after the event. Around each event, it is defined a 21 days window in which the stock abnormal returns are calculated. The abnormal returns for

[6] For the first approach: P/E is price to earnings, P/BV is price to book value, PEG is price/earnings to growth, PBVG is price/book value to growth, EV is embedded value and AV is appraisal value. For the second approach, P/E – ROE is frequent.

[7] The classification criteria must be:
a) simple: in other words, the cataloguing is carried out according to a clear and easy to share logic;
b) demonstrable: i.e. the classification must be based on checkable data;
c) neutral: i.e. the most impartial as possible;
d) constant: in other words, the adopted criteria are amended only if the hypotheses of reference vary objectively.

stock *i* at time *t* (AR_{it}) are the difference between the actual returns and the normal returns, estimated by the market model:

$$R_{NORMit} = \alpha_i + \beta_i R_{mt} + \varepsilon_t$$

where (R_{NORMit}) is the normal return for stock *i* at time *t*, R_{mt} is the market return[8] and the parameters α_i and β_i are estimated running a simple linear regression[9] between R_{it} and R_{mt} over the estimation window which extends 121 days preceding the event window (Campbell *et al*. [1997]).

To draw overall inferences for the event we are interested in, the abnormal return must be aggregated. The aggregation is along two different dimensions: the reports and the time. First of all we have calculated the Average Abnormal Returns for time *t* ($\overline{AR_t}$), that is the mean AR_t, at each time *t* (where *t* is the day of interest in the event window) for all the reports in the dataset, in our case:

$$\overline{AR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t}$$

This measure is the average impact on the market at the day *t*. In order to assess the persistence of the impact around the event date and the overall effect of the report issue, we aggregated the $\overline{AR_t}$ over the time obtaining the Cumulative Abnormal Return, calculated as the sum of $\overline{AR_t}$ over some windows of interest:

$$CAR_{(t_1;t_2)} = \frac{1}{N}\sum_{t=t_1}^{t_2} \overline{AR_t}$$

In particular, we calculated three different *CARs*, using three different windows: the pre-event window (-5;-2), the around-the-event window (-1; +1) and the post-event window (+2;+5). All the results have been tested performing some parametric tests (Brown and Warner [1980], [1985]).

If the report generate value, it's reasonable to think that the market reaction is correlated to the recommendation type: positive abnormal returns should correspond to positive recommendations, negative abnormal returns to negative recommendations and, finally, zero abnormal returns to neutral recommendations. For these reasons, first we classified the reports as positive, negative or neutral, removing from the dataset the reports without an explicit recommendation (*n=105*). Then we analyzed from a descriptive point of

[8] In our case the represented by the blue chips index *MIB30*.
[9] We use the standard methodology (Brown and Warner [1980], [1985]).

view both the abnormal returns and the cumulative abnormal returns caused by the report issues.

Later, to test specifically our three main research hypotheses, assessing whether the content of the reports matters and the investors pay attention on how the analysts get their recommendations, we ran some linear regressions selecting as dependent variable the around-the-event window *CAR* as previously defined. The regressors have been selected from the following set of variables (see also Table 2):

1. the evaluation methodology applied (*EVMET*)[10];
2. some inputs of the models, such as, the average risk premium, the average discounting rates[11] and the time horizon in the analytic forecasts (*INPUT*, it's a matrix of these 3 variables: *AVGRP*, *AVGDISR*, *TIMEHOR*[12]);
3. the timing of the report issue, that is the hot/cold period (*TIME*);
4. the activity of the broker over the years, measured by the ratio (*BROWEIGHT*):

$$\frac{reports\ issued\ by\ the\ broker}{total\ reports\ analyzed}$$

The initial expression we tested is the following one [1]:

$$CAR_{i,t}(-1;+1) = \alpha + \beta_1 EVMET_{i,t} + \beta_2 INPUT_{i,t} + \beta_3 TIME_{i,t} + \beta_4 BROWEIGHT_{i,t} + \varepsilon_{i,t}$$

Where *i* represent the firm evaluated and *t* the report issue date. The qualitative variables have been represented by dummy variables[13].

Then, focusing our attention on the kind of evaluation methods used by the analysts (fundamental analysis or market ratios approach) we replaced the dummy identifying the reports with or without methods (*EVMET*) with another dummy taking into account if the analyst used a fundamental method or a market ratio approach (*FUNDMRKT*). With the replacement, the starting expression 1 becomes as follow [2]:

$$CAR_{i,t}(-1;+1) = \alpha + \beta_1 FUNDMRKT_{i,t} + \beta_2 INPUT_{i,t} + \beta_3 TIME_{i,t} + \beta_4 BROWEIGHT_{i,t} + \varepsilon_{i,t}$$

[10] This qualitative variable distinguishes if the report has an explicit evaluation method used or not.
[11] In the most part of reports, the analysts use more than one measures for market risk premia and discounting rates (e.g. they often use different discounting rates for different business units or for different time horizons). We calculated the arithmetic mean of these values both of market risk premia and discounting rates used in the same report.
[12] The time horizon length has been calculated as a difference between the analytic forecasts date and the report date over 360 days.
[13] The more correct procedure should be to perform a panel data analysis instead of a simple linear regression. The panel data regression would allow to consider the identity and the not observable features of the analyst (or of the group of analysts) writing the report. In our case it's not straightforward to figure out the panel as we have an unbalanced panel data, due to the nature of our data, that are not regular over the time. The procedure of dummy variables (LSDV) is not practicable as well because we would have too many dummies.

6. Results

6.1. Market reaction to analysts' recommendations: a further investigation

We first analyzed the market reaction to the report issue looking at the daily $\overline{AR}$ trend over the event window (-10; +10), distinguishing between bad, neutral and positive recommendations. The sample size is 2415 for good recommendations, 441 for bad and 1564 for neutral ones. The average abnormal returns and the market reaction plot are reported in Table 5 and Figure 1.

Insert Table 5

Insert Figure 1

The results are consistent with the previous literature, on the strength of that the recommendations have an informative content for the market. Our empirical evidence shows that both the sign and the intensity of the reaction are consistent with expectations and statistically significant around the event day (*t=0*). So, it's documented that financial analysts' ability to pick up under-valuated stocks or, on the contrary, to drop down over-valuated stocks.

Furthermore, the negative recommendations have a bigger negative impact respect to other kinds of recommendation: the abnormal return are slightly positive at the beginning of the event window, but immediately before the event day and in the few days after, they drop down significantly[14]. This is not really surprising as the negative recommendations are less frequent than the other ones and so, it's likely the investors put more weight on this kind of recommendations rather in the others, so the former ones have more informative value.

The neutral recommendation effect can be assimilated to the negative recommendation one. This behaviour is consistent with the conflict of interest hypothesis (e.g. Michaely and Womack [1999], Lin e McNichols [1998] or Dugar e Nathan [1995]): the analysts, having to issue a negative recommendation, prefer to issue a neutral one without compromising their relationship with the company management. Another behavioural explanation is related to the optimistic bias: the analysts tend to have a too much optimistic view of the stocks they evaluate.

Focusing on the pre-event period, consistently with previous results (see Womack [1996] and Belcredi *et al.* [2003]), there is an anticipated effect on the market respect to the

[14] The *t-test* on the absolute value of the difference between the *ARs* is statistically significant at 1% level.

event date. The negative recommendations cause negative abnormal returns since *t=-5*, even though they become statistically significant just in *t=-1*. For the positive and neutral recommendations the anticipated effect is more evident and significant starting from *t= -1*.

A possible explanation of this evidence (see also Belcredi *et al.* [2003], Michaely and Womack [1999] and Stickel [1995]) is that some private clients have been receiving some relevant news before the issue date printed on the report. This hypothesis, even though widely spread in US, would be violating the Italian regulation imposing the investment banks and brokerage houses to distribute their reports to all clients (at the date printed on the paper), avoiding to select some of them or to transmit the documents in a selective way.

Another possible hypothesis could be instead related to the fact that some relevant news could become public before the report date and so the market effect is caused by them, independently on the report dissemination.

Looking at the post-event period, the abnormal returns disappear quite quickly in correspondence to positive and neutral recommendations while the negative recommendation impact does not have a clear trend after the event date, even though the abnormal returns are statistical significant just until *t=1*. This subsequent irregular variation in the market prices could be either related to other news, independent on the report disclosure or simply be dependent on some noise in our sample. This analysis should need further investigation taking into account, for instance, the changes in the recommendations (upgrade vs downgrade).

The *CAR* analysis confirms the daily evidence shown above.

Insert Table 6

Considering the narrow pre-event window (-5; -2), the negative recommendations show a significant anticipated effect on the market, while we do not find any significant abnormal returns for the other kinds of recommendations. On the contrary, consistently with $\overline{AR}$ daily data, we document a significant market price reaction over around-the-event window regardless of the nature of the recommendation. The stronger effect is still recorded for the negative advice.

This asymmetry in the market behaviour could be simply due to our recommendation classification. We classified the recommendations in the three categories, neglecting whether they were a simple reiteration or a change from a previous advice. It has been documented that there is a link between the size of the reaction and the type of recommendation. As pointed out by Belcredi *et al.* [2003], for stocks added to a buy (sell) list it may be expected a

stronger positive (negative) market impact than for stocks upgraded (downgraded) but still remaining in the same category. In further investigation we will control for this because if our results would hold, they'd confirm what already demonstrated by Womack [1996] and Stickel [1995] for the US market and by Belcredi *et al.* [2003] for the Italian one.

Finally, the post event analysis for the window (+2; +5) do not show evidence of any significant abnormal returns for none of our recommendation categories.

6.2. Market reaction and the properties of financial reports

So far we have once more documented the informative value of analysts' report, but we have not yet analyzed if the content of the reports matters in the capital market, that is the main issue of our work. In this section we report the findings related to the research hypotheses presented in section 3:

H1: Does the content of reports matter for the investors?

H2: Does the market care about the evaluation methods used by the analysts? Do the different evaluation methods have different value for the investors?

H3: Can the timing of the report issuing explain a different market impact?

In order to test the hypotheses *H1* and *H3* we ran the regression 1 in Section 3 on three different sub-samples, each one corresponding to positive recommendations, negative and neutral ones. We used a stepwise procedure to select significant variables: the results are reported in Table 7, panel A-B-C.

Insert

Table 7 panel A-B-C

Although we test many properties of the report content, we get just few significant variables. The most part of the estimated coefficients (4 out of 6) are never statistically significant, leading to confirm just partially *H1*. The insignificance of the estimated coefficients could be dependent on a simple structural effect deriving from the small size of our sub-samples. Because of many data missing in our original dataset[15], in some cases we have few observations for our regressions. As our focus is on the whole content of the reports, we did not cancel out any variable, although causing a huge decrease in sub-sample size. In

[15] Many analysts do not explicit the parameters they use or, as already said, the evaluation methods applied.

consequence of this, the less evident effects on the market reaction of some variables could be hidden just by this problem.

Another possible explanation could be related to some pitfalls in the specification of our variables. In regard to the average market risk premium and discounting rate, we have considered a simple arithmetic mean of different values used by the analyst in the report. For instance, an investor could do not make this calculation and pay more (less) attention just to the highest (lowest) rate used according to his view and his risk aversion. In regard to the time horizon, it's possible that to read the report the investor applies more qualitative time horizon definition that our quantitative framework can not capture. Regarding the brokers' activity, we used the variable *BROWEIGHT* as a reputation proxy: more active brokers should represent more trusted ones. We should try with other definitions, even though it's the difficulty to assess the reputation giving raise this issue. A further investigation will control for all these aspects.

The results are different across the sub-samples. The positive recommendations sub-sample doesn't confirm the hypothesis *H1* at all, as no variable representing the report properties is significant. On the other hand, this sub-sample confirms the hypothesis *H3*, as the dummy representing the timing of the issuing is significant. The negative sign of the variable coefficient demonstrates that the reports issued in the cold periods are more influential.

The sub-samples with negative or neutral recommendations share the same features, even if with a different intensity. The hypothesis *H1* finds a confirmation, even though in relation to just one property of the report, that is the elicitation of evaluation methods. In both cases, the market reaction is stronger when the evaluation methods are elicited. The dummy variable describing these property is highly significant and, especially in the sub-samples with negative recommendations, the power of the statistical model is quite interesting (the adjusted R^2 is 0.339). It's worth marking that the constant term in these regressions is not significant at all (negative recommendations) or weakly significant. It means that these reports influence the market only (negative recommendations) or mainly (neutral recommendations) when the evaluation methods is elicited.

With regard to the hypothesis *H3*, contrary to the positive recommendations sub-sample, it is not confirmed, as the dummy representing the timing of the issuing is not significant.

Finally, we ran the regression 2 to test the hypothesis *H2* about the importance of the kind of the evaluation methods used in the reports. In this case we did not find any significant

result, therefore rejecting the assumption that using fundamental analysis or market ratios approach is relevant for the market reaction.

7. Discussion

Our results show the market looks at different report properties depending on which is its final recommendation. The reports with a positive recommendation are by far more numerous. We argue investors are used to get positive recommendations and they don't wonder how the analysts build the investment advice which are after all very common. Differently investors believe that there would be a stronger motivation beneath the reports issued when analysts' activity is less frequent. During hot periods, analysts are somehow obligated to issue reports and they could assume an herding behaviour to reduce the negative consequences of wrong forecasts. On the other hand, only the bolder analysts with strong beliefs issue reports in the cold periods. Beside this signalling explanation of the higher market impact of the reports issued in cold periods, we must remember the hot reports are issued in correspondence to time moments where the disclosure about the company goals and the most significant quantitative data has been already done by the companies. Therefore these reports have just a residual function of completing and spreading the disclosure of the most relevant news. On the contrary the cold reports would have a stronger informative value basically because they are based on not yet public information, and so, not discounted by the market. The analysts could have a preferential access to qualitative information, such as the management quality or its credibility and according to this hypothesis, the market would recognize the analysts' skill in collecting price sensitive information during periods of not intensive disclosure by the companies.

Commento [r1]: Mi viene in mente che un possibile indice di reputazione potrebbe essere la frequenza con cui l'analista emette report nei periodi cold. Al di là di questo si tratterebbe di analizzare la frequenza nei periodi cold/hot per vedere se può dirci qualcosa.

These remarks don't apply to negative or neutral reports[16] which are less numerous both due to the analyst' optimism and to the conflict of interests which induces analysts to avoid making public negative evaluations of companies. Therefore investors likely think when an analyst issues a negative advice he really believes in it and he is not simply following others' opinion. This explains why it isn't important when the report is issued but not why investors pay great attention on whether the evaluation methods are elicited or not. We think a convincing explanation could lie on the disposition effect, that is the tendency of investors to sell shares where they are gaining, while keeping the ones where they are

[16] The common features of negative and neutral reports are not surprising as the investors often consider the neutral recommendations as negative ones.

suffering losses (Shefrin and Statman [1985]). The negative advice could reach investors both who are gaining and who are loosing. While the former ones will be willing to sell, the latter ones, before selling the losing stocks, will require well documented reports with convincing arguments supporting the general advice. Our results are also consistent with previous findings of the literature. Hirst et al. [1995] and Asquith et al. [2005] found that investors do not investigate beyond report type in the case of upgrades, but seem to read downgrade reports closely, using more information than in the case of upgrades to support the advice. They find that when a report is unfavorable, the strength of the arguments contained in an analyst's reports affects investors' judgments. The study confirms this evidence providing a further and more detailed investigation on the properties of the financial analysts' reports.

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Tables and Figures

Table 1. Report distribution over the months

Mese	Frequency	%	Cumulative %	Period
November	779	17.03	96.57	**Hot**
September	735	16.07	72.25	**Hot**
May	593	12.97	38.81	**Hot**
March	456	9.97	20.97	**Hot**
July	453	9.91	52.18	**Hot**
October	333	7.28	79.53	**Cold**
February	323	7.06	11.00	**Cold**
April	223	4.88	25.85	**Cold**
August	183	4.00	56.18	**Cold**
January	180	3.94	3.94	**Cold**
June	158	3.46	42.27	**Cold**
December	157	3.43	100.00	**Cold**
	4573	100.00		

Table 2. Collected data classification

General report features	• Report type • Report issuing date • Report size • Analysts' name
Evaluation Methods	• Net asset method • Financial method: discounted cash flow, dividend discounted model • Income method: discounted shareholder profit, warranty equity valuation, discounted earnings, ROE required • "Composed method": EVA, patrimonial-income method • market ratios: traditional (P/E, P/BV…), PEG, PBVG, EV, AV
Parameters	• market risk premium • actualization rates • time horizon of forecasts
Final output synthesis	• investment recommendations • target prices

Notes: 1. Warranty equity evaluation method establishes that the value of equity (E) is given by this formula: $E = (ROE - g) / (COE - g) \cdot P/BV$, where ROE is return on equity, g is long term growth rate, COE is the cost of equity and P/BV is price to book value. ROE required is the same of WEV, but g is equal to zero. 2. P/E is price to earnings, P/BV is price to book value, PEG is price/earnings to growth, PBVG is price/book value to growth, EV is embedded value and AV is appraisal value.

Table 3. Report frequency by recommendation

Recommendation category	Frequency	%	Cumulative %
Bad	456	9.97	9.97
Good	2429	53.12	63.09
Neutral	1583	34.62	97.70
Not available	105	2.30	100.00
Total	4573	100.00	

Table 4. Report frequency in general, among sectors and by year

PANEL A			PANEL B				PANEL C				PANEL D						
	WHO		*WHEN*				*WHAT*				*HOW*						
	Broker		**2000**	**2001**	**2002**	**2003**	**Insurance**	**Banking**	**Manufacture**	**Utilities**	**Net asset method**	**Earnings-based method**	**Financial method**	**Composed method**	**Market ratios "naïve"**	**Market ratios "sophisticated"**	**Qualitative analysis**
1	ABN Amro	81	2	31	12	36	7	30	20	24	4	9	27	36	54	5	8
2	Actinvest Group	112	21	46	41	4	16	51	1	44	3	0	42	42	42	50	53
3	Albertini & C.	50	9	41	0	0	4	23	23	0	0	0	8	8	22	2	1
4	BNP Paribas	32	5	3	5	19	0	3	7	22	0	1	10	11	18	0	1
5	Banca Akros	117	1	23	19	74	8	27	38	44	10	9	26	35	56	0	2
6	Banca Aletti & C.	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
7	Banca Commerciale Italiana	12	5	7	0	0	3	2	7	0	0	0	0	0	0	0	0
8	Banca Finnat Euramerica	5	2	0	2	1	0	0	3	2	0	0	0	0	0	0	0
9	Banca Leonardo	54	19	15	20	0	1	28	13	12	5	7	10	17	23	0	1
10	Banca Popolare di Bari	7	0	0	3	4	0	3	3	1	0	0	7	7	0	0	0
11	Banca Sella	6	0	2	4	0	1	1	2	2	2	0	0	0	0	0	0
12	Banca d'Intermediazione Mobiliare - IMI	207	7	90	75	35	25	61	56	65	21	7	32	39	105	14	11
13	Bipielle Sim	3	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0
14	Borsaconsult Sim	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
15	Caboto Sim	210	52	47	27	84	33	52	47	78	28	7	70	77	92	6	3
16	Cazenove	10	0	0	0	10	0	1	0	9	0	0	0	0	7	0	0
17	Centrosim	141	4	0	54	83	8	43	34	56	1	2	14	16	28	1	0
18	Cheuvreux	125	24	28	38	35	23	35	36	31	31	7	42	49	113	25	57
19	Citigroup	24	0	0	0	24	0	4	11	9	0	0	9	9	22	1	1
20	Cofiri Sim	17	0	0	7	10	0	5	7	5	0	3	1	4	1	1	0
21	Consors	29	0	0	29	0	3	9	7	10	0	0	0	0	0	0	0
22	Credit Lyonnais	32	0	7	16	9	4	7	11	10	4	1	10	11	28	1	0
23	Credit Suisse	76	5	19	16	36	14	15	12	35	15	2	37	39	52	0	2
24	Deutsche Bank	471	99	117	100	155	20	147	125	179	32	1	51	52	134	1	0
25	Dresdner Kleinwort Benson	120	6	39	24	51	5	42	14	59	6	9	48	57	76	1	3

26	Eptasim	76	4	17	33	22	8	31	18	19	10	1	35	36	36	4	3
27	Euromobiliare	412	70	90	96	156	52	157	107	96	43	14	76	90	263	31	5
28	Fortis Bank	30	0	17	13	0	0	13	0	17	1	2	4	6	13	1	1
29	Gestnord	3	0	0	1	2	0	0	2	1	0	0	0	0	0	0	0
30	Goldman Sachs	87	2	0	28	57	14	22	14	37	0	2	9	11	40	16	1
31	Idea Global	10	3	7	0	0	0	3	7	0	0	0	0	0	0	0	0
32	Ing Barings	31	1	18	7	5	0	0	19	12	0	0	4	4	11	1	0
33	Intermonte Securities Sim	372	136	124	39	73	54	168	73	77	43	35	74	109	252	12	3
34	IntesaBCI	11	0	11	0	0	2	3	6	0	0	0	0	0	3	0	0
35	JP Morgan	8	0	0	0	8	0	1	1	6	0	1	0	1	0	0	0
36	Julius Baer	102	21	23	25	33	17	24	25	36	14	18	31	49	85	5	57
37	Lehman Brothers	97	0	0	25	72	5	19	29	44	7	6	61	67	73	7	0
38	Massimo Mortari	5	0	3	2	0	0	0	5	0	0	0	4	4	0	0	0
39	Mediobanca	173	1	0	55	117	16	46	43	68	30	4	37	41	70	8	3
40	Merrill Lynch	352	20	92	97	143	38	145	64	105	11	12	50	62	224	16	5
41	Metzler Italia	10	5	4	1	0	2	2	2	4	0	0	0	0	0	0	0
42	Rasbank	9	0	0	1	8	1	3	3	2	0	0	0	0	4	0	0
43	Rasfin	80	31	37	12	0	2	20	21	37	6	3	22	25	31	2	0
44	SG Securities Milano	24	4	20	0	0	6	9	9	0	2	3	1	4	10	0	0
45	Santander Central Hispano	68	0	0	41	27	16	18	11	23	3	2	14	16	42	0	1
46	Societé Generale	86	0	51	35	0	8	25	23	30	8	6	7	13	31	3	1
47	UBS Warburg	229	19	79	40	91	22	65	63	79	17	0	81	81	207	4	2
48	Unicredit Banca Mobiliare	363	35	44	93	191	53	145	75	90	13	5	39	44	114	22	1
49	Uniprof sim	11	0	4	4	3	0	2	4	5	0	0	0	0	6	0	0
50	Websim	11	0	0	11	0	2	9	0	0	0	0	0	0	7	0	0
		4603	**614**	**1157**	**1151**	**1681**	**493**	**1520**	**1102**	**1488**	**380**	**180**	**1015**	**1195**	**2448**	**240**	**234**

PANEL E							
Companies	**Sector**	**N total reports**	**N reports with a "prevalent" method**	**N reports with a "prevalent" method - year 2000**	**N reports with a "prevalent" method - year 2001**	**N reports with a "prevalent" method - year 2002**	**N reports with a "prevalent" method - year 2003**
Alleanza Assicurazioni	Insurance	150	60	5	22	15	18
Assicurazioni Generali		183	56	9	10	22	15
Ras		160	46	4	11	16	15
TOTAL		493	162	18	43	53	48
B Pop Verona e Novara	Banking	68	17	0	0	6	11
Banca Antonveneta		41	10	0	0	5	5
Banca Fideuram		122	41	7	14	9	11
Banca Intesa BCI		218	51	4	12	16	19
Bnl		157	31	5	8	8	10
Capitalia		119	29	4	13	5	7
Fineco		98	14	1	9	0	4
Mediolanum		167	61	8	25	14	14
Monte Pashi di Siena		126	28	5	8	9	6
San Paolo IMI		203	57	13	11	16	17
Unicredito		201	40	8	7	10	15
TOTAL		1520	379	55	107	98	119
Eni	Manufacture	251	89	11	29	15	34
Fiat		209	78	8	18	24	28
Finmeccanica		119	59	11	16	12	20
Parmalat		145	54	7	12	18	17
Pirelli		141	46	9	19	10	8
Saipem		128	39	4	8	10	17
STMicroelectronics		109	54	4	13	14	23
TOTAL		1102	419	54	115	103	147
Enel	Utilities	291	83	9	21	8	45
Mediaset		239	64	7	18	8	31
Olivetti		64	35	11	21	3	0
Seat P. G.		188	43	3	18	11	11
Snam Rete Gas		126	28	0	0	10	18
Telecom Italia		273	48	5	10	9	24
Tim		307	90	8	20	25	37
TOTAL		1488	391	43	108	74	166
TOTAL		4603	1351	170	373	328	480

Table 5. Average Abnormal Return in correspondence to the report date

	Good news			Bad news			Neutral news		
T	**AR**	**T test**	**Sign.**	**AR**	**T test**	**Sign.**	**AR**	**T test**	**Sign.**
-10	-0.0417%	-1.1765		0.1500%	1.5798		0.0560%	1.2321	
-9	-0.0030%	-0.0829		0.0407%	0.4241		0.0995%	2.0249	**
-8	0.0073%	0.1982		-0.0480%	-0.5226		0.0589%	1.2180	
-7	-0.0018%	-0.0446		0.2025%	1.9420	*	-0.0679%	-1.5555	
-6	-0.0366%	-0.9499		-0.0612%	-0.6439		-0.0698%	-1.4340	
-5	0.0316%	0.8128		-0.1178%	-1.2333		-0.0832%	-1.6992	*
-4	0.0458%	1.2197		-0.2312%	-2.0574	**	-0.0494%	-0.8461	
-3	-0.0062%	-0.1530		-0.1450%	-1.3415		-0.0187%	-0.3840	
-2	0.0401%	0.9952		-0.2041%	-1.7407	*	0.0070%	0.1263	
-1	0.2067%	4.7467	***	-0.2741%	-2.0288	**	-0.0591%	-0.8935	
0	0.1017%	2.2003	**	-0.5835%	-3.4680	***	-0.1798%	-2.8844	***
1	0.1067%	2.5650	***	-0.1149%	-1.0623		-0.1267%	-2.3733	**
2	0.0595%	1.5914		-0.0364%	-0.3124		-0.0638%	-1.0178	
3	-0.0538%	-1.2544		0.2205%	1.8142	*	-0.0462%	-0.7242	
4	0.0446%	1.1684		0.0085%	0.0782		0.0356%	0.7151	
5	0.0106%	0.2883		-0.2074%	-2.2500	**	0.0887%	1.7927	*
6	0.0105%	0.2672		-0.0528%	-0.2899		-0.0355%	-0.7317	
7	0.0002%	0.0047		-0.2467%	-1.4330		-0.0432%	-0.9224	
8	0.0519%	1.3824		0.2158%	2.2198	**	0.0141%	0.3038	
9	-0.0367%	-0.8081		-0.1323%	-1.4020		-0.0685%	-1.4610	
10	-0.0131%	-0.3047		-0.0149%	-0.1510		-0.0024%	-0.0544	

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

Figure 1. Average Abnormal Return in correspondence to the report date

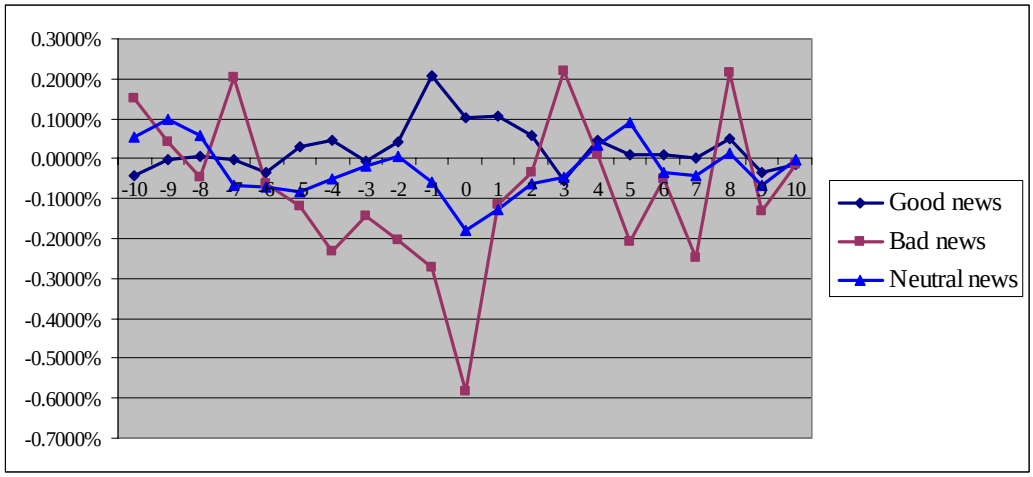

Table 6. Cumulative Abnormal Return in correspondence to the report date

Recomm.	Good news			Bad news			Neutral news		
N report	N = 2415			N = 441			N = 1564		
	CAR	T test	Sign.	CAR	T test	Sign.	CAR	T test	Sign.
(-5; -2)	0.1112%	1.3804		-0.6982%	-2.97673	***	-0.1442%	-1.3088	
(-1;+1)	0.4151%	5.7609	***	-0.9725%	-5.1923	***	-0.00365	-3.9530	***
(+2;+5)	0.0609%	0.8120		-0.0148%	-0.08025		0.0142%	0.1437	

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

Table 7. The market reaction to report issue by recommendation: the effects of the report content (model 1)

Panel A: by good recommendations

Included Variable	B	Std. Error	t	Sig.
(Constant)	7,435E-03	,004	1,674	,096
TIME	-1,347E-02**	,006	-2,289	,024

Excluded Variables	Beta In	t	Sig.
BROWEIGHT	-,058	-,706	,482
TIMEHOR	,023	,276	,783
AVGDISR	,033	,403	,688
AVGRP	-,007	-,089	,929
EVMET	-,002	-,028	,978

N	F	Sig.
144	5,238	,024
R	**R Square**	**Adjusted R Square**
,189	,036	,029

Panel B: by bad recommendations

Included Variable	B	Std. Error	t	Sig.
(Constant)	-4,000E-04	,010	-,039	,969
EVMET	-5,285E-02***	,016	-3,280	,004

Excluded Variables	Beta In	t	Sig.
BROWEIGHT	-,184	-,979	,341
TIMEHOR	,008	,041	,968
AVGDISR	-,123	-,624	,541
AVGRP	-,150	-,791	,440
TIME	,182	,929	,366

N	F	Sig.
20	10,761	0,004
R	**R Square**	**Adjusted R Square**
,612	,374	,339

Panel C: by neutral recommendations

Included Variable	B	Std. Error	t	Sig.
(Constant)	9,839E-03	,006	1,755	,084
EVMET	-1,973E-02**	,008	-2,450	,017

Excluded Variables	Beta In	t	Sig.
BROWEIGHT	,097	,796	,429
TIMEHOR	,056	,460	,647
AVGDISR	-,122	-1,006	,319
AVGRP	-,210	-1,760	,084
TIME	,048	,389	,698

N	F	Sig.
65	6,002	0,017
R	**R Square**	**Adjusted R Square**
,297	,088	,074

Notes: This table (in panels A-B-C) presents the results of estimating the following regression using ordinary least squares:

$$CAR_{i,t}(-1;+1) = \alpha + \beta_1 EVMET_{i,t} + \beta_2 INPUT_{i,t} + \beta_3 TIME_{i,t} + \beta_4 BROWEIGHT_{i,t} + \varepsilon_{i,t}$$

where the variables are defined as follows:
$CAR_{i,t}(-1;+1)$, 3-day Cumulative Abnormal Return centred on the event date for firm I; $EVMET_{i,t}$ distinguishes if the report has an explicit evaluation method used or not, taking the value 1 if the report has an explicit main evaluation method, 0 otherwise; $INPUT_{i,t}$, a matrix of 3 variables: $AVGRP_{i,t}$, $AVGDISR_{i,t}$, $TIMEHOR_{i,t}$, measuring the average risk premium, the average discounting rate and the time horizon used by the analyst in the report; $TIME_{i,t}$, timing of the report issue, taking value 1 if the report has been issued in "hot" periods, 0 if in "cold" period; $BROWEIGHT_{i,t}$, taking into account the activity of the broker over the years and

measured as (reports issued by broker I/total reports analyzed); $\varepsilon_{i,t}$ assumed normally distributed error term with zero mean and constant variance.
t–statistics are to the right of the estimated coefficients. The adjusted *R2* and associated *F–statistic* is for the entire regression.
Beta In is the beta weight that would result if the given variable were put back into the model for the listed step. Likewise, t and significance are the coefficients which would result from adding that variable back in.
Statistical significance: *** = at 1%, ** = at 5%, * = at 10%.