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**THE REACTION OF STOCK PRICES  
TO RATING CHANGES**

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# THE REACTION OF STOCK PRICES TO RATING CHANGES

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## *Abstract*

*The paper investigates the reaction of common stock returns to rating changes for a sample of 299 rating actions involving Italian firms and announced by Fitch, Moody's and Standard&Poor's from January 1991 till August 2003. Rating changes and credit watches are classified according to direction, reason, the sector of the rated entities, anticipation through watches and contamination by concurrent news. Significant average excess returns are recorded only for negative watches and for actual downgrades. Abnormal returns however seem to be driven mainly by the release of relevant information around the announcement of the rating action. The study, by providing evidence for a specific European country, is a useful sensitivity check to the earlier empirical research, mainly focused on the U.S. case.*

Keywords: Rating action, Market efficiency, Event study.

JEL classification: G14, G18, G29

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## **1. Introduction**

In Italy, recent defaults by two major corporations have led to a fierce debate about the role of rating agencies. One view points out that regulators could rely on ratings as an instrument of information and protection of small investors; an alternative view underlines that rating agencies move slowly and therefore that the information content of their judgements is poor.

Beyond the domestic issues, investigation of the information content of ratings is a central topic to all financial market regulators. Recall, for instance, the central role assigned to the external ratings by the New Capital Accord in the calculation of banks' regulatory capital under the so called standardised approach.

While the information efficiency of ratings has been extensively analysed with reference to the U.S. markets, little evidence is available for European countries and no study focuses specifically on the Italian case. Therefore, the assessment of the price impact of rating actions for a particular European country, such as Italy, may be a useful sensitivity check to the earlier research mainly based on U.S. data. Moreover, it may provide insights for financial markets authorities involved in the evaluation of the usage of the external ratings as a regulatory tool.

This paper assesses the impact on stock prices of rating changes for a sample of 299 rating actions involving Italian listed companies and announced from the 1<sup>st</sup> of January 1991 till the 31<sup>st</sup> of August 2003. Rating changes include both upgrades and downgrades, as well as positive and negative credit watches. Abnormal returns for stock prices are estimated, controlling for the anticipations through watches, press speculations or corporate disclosure, the sector of the rated firm, the reason which prompted the rating action.

Consistently with the previous empirical evidence, results show that weak negative abnormal returns are associated with downgrades in the event window ranging from the day before till the day after the announcement; as far as concerns upgrades, significant positive abnormal returns arise after the rating change, thus signalling a delay in the market reaction to positive news. In both cases, no preannouncement effect is detected. Rating changes preceded by watches or outlooks lead to a greater price impact than unexpected ones. Similarly, announcements preceded by contaminating information result in higher abnormal returns: this

might provide evidence that the stock price reaction is mainly due to the contaminating information rather than to the rating action itself. Both the sector of the rated entity and the reason of the rating changes seem to matter only for downgrades: due to sample size issues, however, this evidence may not be regarded as conclusive.

Additions to the watch list (both positive and negative) were analysed as a separate sample of rating actions: the results are similar to the evidence collected for the sample of upgrades and downgrades.

The work is organised as follows. Section 2 briefly reviews the conclusions of the previous literature on the impact of rating actions; section 3 posits a few questions which are to be investigated in the paper; the following paragraph describes the data and the methodology used; section 5 comments the results; conclusions follow.

## **2. Previous Empirical Studies**

The information content of ratings can be examined by focusing on the stock and bond price impact of rating changes. If agencies act on the basis of information which is not already in the public domain, we would expect to find significant abnormal returns associated with rating changes (as computed with reference to the day of the announcement or to a [-1, +1] event window). Testing for abnormal returns over longer pre- and post-announcement periods may also be very useful: detection of a pre-announcement effect, for instance, support the conclusion that agencies merely react to news already embedded in market prices.

Early studies on the effect of rating changes, using either monthly or daily data for the U.S. bond market, found either mixed evidence (Pinches and Singleton, 1978) or no impact at all (Weinstein, 1977; Wakeman, 1978). These results mainly reflected the fact that most of the rating actions followed the occurrence of publicly known events. Recent researches refine the methodology by breaking down the rating actions into different subgroups according to whether they were preceded by a credit watch in the same direction and/or by contaminating information. Hand et al. (1992), among the others, find out that only negative watches and downgrades lead to a significant effect on both bond and stock prices and that non contaminated samples exhibit stronger reactions.

Goh and Ederington (1993) argue that downgrades may have a different impact on stock prices depending on the reason which led to an increase in the firm's risk and, in particular, on whether such an increase corresponds to a wealth transfer from bondholders to stockholders. The authors actually find a significant negative market reaction only to downgrades due to a deterioration of firm's financial prospects (having negative implications for stockholders).

Dichev and Piotroski (2001) check also for post-announcement drift by investigating the price impact along a three-year horizon. Downgrades and upgrades are broken up into two subsamples depending on whether they relate to holding or subsidiaries. The results show that only downgrades matter: they exhibit a post-announcement effect which lasts at least one year and is more pronounced for holdings, small firms and lower rated entities.

Vassalou and Xing (2003) explain the asymmetric reaction of market prices to rating actions as stemming from the pattern of the underlying default likelihood probability. This index would move sharply only before downgrade announcements (by rising before and gradually decreasing in the following years), while it would follow a less pronounced pattern before upgrades. Moreover, the authors argue that the ranking of the firms resulting from rating can be easily replicated by using indicators such as dimension or book to market value: therefore, the information content of ratings would be poor.

A stream of the literature investigates the impact of rating changes specifically for banks<sup>1</sup>. Schweitzer et al. (1992) test the null hypothesis that rating actions matter less for banks than for corporates, the idea being that since banks are highly regulated entities the amount of information available to the market might be higher and hence the information content of rating actions might be lower. The alternative hypothesis (i.e. rating actions matter more for banks) is based on the idea that regulators might allow withholding of adverse information in view of the preservation of the stability of the banking system, therefore leading to more pronounced abnormal returns associated with unfavourable bank rating actions. In fact, the empirical evidence shows that downgrades lead to a stronger effect when involving banks, thus lending support to the second hypothesis.

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<sup>1</sup> Recall also Billet et al. (1998), analysing the effect of rating actions for a sample of U.S. bank holdings and finding a significant price impact only for downgrades, and Richards and Deddouche (1999), focusing on a sample of banks of developing countries and finding no evidence of price impact.

Gropp and Richards (2001) assess the impact of rating changes on stock and bond prices for a sample of European banks. They find little evidence of announcement effects on bond prices, while for stock prices strong effects are associated only with unanticipated rating changes; moreover, the underlying reason seems to matter for the subsample of downgrades.

The implications of the empirical evidence on the information content of ratings for the role of rating agencies in financial markets is not unambiguous. A few authors argue that, notwithstanding the mixed evidence, rating agencies may perform a useful function in summarising and providing information at least to stockholders. According to this view, rating agencies produce valuable complementary information. As a side effect, this would provide a useful tool for market discipline, improving the corporate governance of the rated entities.

### **3. The Hypotheses to Be Tested**

Following the literature recalled above, the information content of the rating actions will be investigated by controlling for the direction of the changes, their anticipation either through a watch or an outlook in the same direction, their contamination either by news stories and/or the release of information by the issuer, the reason of the change and the sector of the issuer. In particular, the hypotheses to be tested are the following. First, the rating actions may produce a different impact on stock prices according to whether they are upgrades, downgrades or watches. Rating changes are therefore broken into two subsamples: that of actual downgrades and upgrades and that of additions to the watch list. Within each subgroup, the hypothesis to be tested is whether stock prices react differently to downgrades versus upgrades (and similarly whether stock prices react differently to negative versus positive watches).

Second, announced changes, either by a watch or an outlook notice, might impact less than unanticipated ones. Hence it will be investigated whether stock prices react differently to announced downgrades/upgrades versus unanticipated rating actions (and similarly for the additions to the watch list).

Contaminating news, either as a press speculation or a corporate disclosure of the event prompting the rating action, might bias upward the impact of the rating action itself. The market reaction might in fact be due to the concurrent release of information rather than to the rating change. Excluding contaminated observations, however, might be inappropriate especially if the firm's disclosure is prompted by the expectation of a rating action. Hence, it is convenient to distinguish between contaminated and uncontaminated observations. The third hypothesis is, therefore, that stock prices react differently to contaminated versus uncontaminated rating actions (watches).

The impact of the rating action might also be affected by the sector of the issuer: therefore, it is interesting to split observations according to whether they refer to a financial firm or to an industrial firm. As recalled above, this might be true if different regulatory regimes (designed respectively for financial and non financial issuers) imply different degrees of transparency. It will hence be checked whether the stock price reaction is affected by the sector of the issuer involved in the rating action.

Finally, the explanation of the rating changes might be relevant: a differential impact might arise depending on whether the underlying reason is a change in the firm's earnings or in the firm's leverage. In particular, following Goh and Ederington (1993), observations are split into three groups: the first including an improvement/deterioration of the firm's earnings, financial prospects and cash flows which might be due either to firm's specific events or to institutional/macroeconomic factors; the second linked to events which change the firm's leverage, such as mergers and acquisitions; the third including miscellaneous reasons.

## **4. Data and Methodology**

### *4.1 The Data*

The data set includes 299 rating actions performed in the period 1<sup>st</sup> January 1991 – 31<sup>st</sup> August 2003 by Fitch/IBCA, Moody's and Standard&Poor's. The sample was compiled by combining the information provided by the Bloomberg database with the information provided by the rating agencies websites. The Bloomberg database was also used to check whether the rating change announcement followed the public disclosure of the corporate event underlying the agency's action.

The analysis concentrates on long term issuer ratings, that is on the agencies' opinion of an obligor's overall financial capacity to pay its financial obligations. Moreover, the analysis focuses on the effect on stock rather than bond prices for two reasons. First, for most of the firms only the issuer rating is available; therefore, selecting only issue ratings would have severely restricted the sample size. Secondly, regardless of the sample size, it is well known that the Italian bond market is thin and illiquid; considering bond ratings might have implied incurring in a poor data quality problem.

Rating actions are distributed as follows:

TAB. 1

DISTRIBUTION OF RATING ACTIONS (1 <sup>ST</sup> JANUARY 1991 – 31 <sup>ST</sup> AUGUST 2003)							
	DOWNGRADE	UPGRADE	NEGATIVE WATCH	POSITIVE WATCH	WATCH EVOLVING	WATCH REMOVED	TOTAL
<i>BY AGENCY</i>							
FITCH	36	10	13	8	2	7	76
MOODY'S	31	22	23	14		6	96
S&P	41	18	36	7	5	20	127
<i>BY ISSUER TYPE</i>							
BANKS	64	44	41	25	3	23	200
INSURANCE COMPANIES	14	4	8	1	2	1	30
CORPORATE	30	2	23	3	2	9	69
<i>ANTICIPATED BY A WATCH OR AN OUTLOOK</i>							
YES	75	24	9	2	--	33	143
NO	33	26	63	27	7	--	156
<i>BY REASON</i>							
EARNING PROSPECTS	53	19	22	2	2	12	110
M&A	30	24	37	24	5	19	139
OTHER	25	7	13	3	--	2	50
<i>TOTAL</i>	<i>108</i>	<i>50</i>	<i>72</i>	<i>29</i>	<i>7</i>	<i>33</i>	<i>299</i>

SOURCE: Fitchratings, Ratings Interactive (Moody's), Ratings Direct (Standard & Poor's), Bloomberg.

The rating changes by Standard&Poor's exceed those performed by Moody's and Fitch: this is in line with the penetration of rating agencies in the Italian market.<sup>2</sup>

<sup>2</sup> In particular, at the 31<sup>st</sup> of August 2003, Standard&Poors' rated 71 issuers; Fitch 43 and Moody's 39.



Among the downgrades, 7 rating actions shifted the rated entity from the investment grade to the speculative category; among the upgrades, the category change took place just once. In 57 cases (corresponding to 26 rating changes), the action was undertaken by two or more agencies within a time span no longer than one week: apart from one circumstance, rating changes are always converging (that is, they moved in the same direction). Finally, agencies changed ratings by two notches at most in almost all the cases. Most of the rating actions involve banks (200 against the 30 concerning insurance companies and the 69 concerning industrial firms); this distribution reflects the fact that the majority of the rated entities are banks.<sup>3</sup>

Rating actions are subdivided according to whether they were anticipated, either by the inclusion in the watch list or by the release of an outlook in the same direction. Overall, 143 events are classified as anticipated, amounting to about 70% of the downgrades and 48% of the upgrades.<sup>4</sup> In the analysis, the observations corresponding to a watch removal are classified either as an upgrade or as a downgrade depending on whether the previous watch is negative or positive. The observations corresponding to the evolving watches are not regarded as an event on themselves but rather are used to define the following rating change as announced.

The rating action is contaminated if there were relevant news or release of information around the announcement of the rating action itself: in our sample, this happened 188 times. Among the anticipated rating changes (amounting to 143), 100 are contaminated by a press speculation or a corporate disclosure about the reasoning of the agency's action.

As the reason motivating the rating action, the majority of the changes is prompted by a merger or an acquisition (139 over 299), followed by events affecting the earning prospects of the firm (110 out of 299) and by miscellaneous events classified in the residual category "Other". This classification also allows to check whether the event is already in the public domain (as it happens in case of mergers, acquisitions, tender offers, etc.).

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<sup>3</sup> In particular, at the 31<sup>st</sup> of August 2003, banks accounted for the majority of the rated entities (71 out of 105), followed by industrial firms and insurance companies (respectively, 21 and 13; the figures include both listed companies and companies belonging to a group with a listed holding).

<sup>4</sup> As far as concerns watches, positive watches were anticipated just in 2 cases (out of 29), while negative watches were anticipated in 9 cases (out of 72).

The breakdown of the rating actions by year shows that the frequency of the rating changes increased greatly over time, simultaneously with the increase of the number of rated entities (Tab. 2):

TAB. 2

RATING ACTIONS BY YEAR (1 <sup>ST</sup> JANUARY 1991 – 31 <sup>ST</sup> AUGUST 2003)							
YEAR	RATING ACTIONS						TOTAL
	DOWNGRADING G	UPGRADING	NEGATIVE WATCH	POSITIV E WATCH	WATCH EVOLVING	WATCH REMOVE D	
1991	1						1
1992	2		2				4
1993	8		4				12
1994	7		1				8
1995	9	1	3				13
1996	4	1	1	3		1	10
1997	1	4	1				6
1998	5	8	3	6	2	3	27
1999	3	8	9	5		8	33
2000	9	15	9	6	1	3	43
2001	14	3	9	2	4	7	39
2002	28	5	22	5		8	68
2003; JAN- AUG.	17	5	8	2		3	35
<i>TOTAL</i>	<i>108</i>	<i>50</i>	<i>72</i>	<i>29</i>	<i>7</i>	<i>33</i>	<i>299</i>

#### 4.2 The Methodology

Abnormal returns associated with rating actions are computed through the application of the standard Event Study Methodology. After setting the announcement day as day 0, a market model is run using the window [-260, -21] as the estimation period, according to the following specification:

$$R_{it} = \alpha_i + \beta_i R_M + u_{it} \quad (1)$$

where  $R_{it}$  is the log return of the stock  $i$  at time  $t$ ,  $R_M$  is the log return of the market portfolio  $M$  at time  $t$ .<sup>5</sup> The estimated parameters are used to compute the abnormal returns in the event window [-20, +20 ]:

<sup>5</sup> In the following, estimation results using the general market index will be shown. The estimation was run also by using the sector market index: the results, qualitatively consistent with those shown in the paper, are available on request to the author.

$$AR_{it} = R_{it} - \alpha_i - \beta_i R_M \quad (2)$$

After averaging the  $AR_{it}$  across events in order to get the average abnormal returns ( $AAR_{it}$ ), cumulative abnormal returns ( $CAR$ ) for the window  $[t, T]$  are defined as:

$$CAR_i(t, T) = \sum_{j=t}^T AAR_{ij} \quad (3)$$

The following tables will report CARs for the windows  $[-20, -11]$ ,  $[-10, -2]$ ,  $[-1, +1]$ ,  $[+2, +10]$  and  $[-20, +1]$ ; in a few cases (that is those relating to the breakdown of the rating actions by sector of the issuer and by reason of the change) only CARs for the window  $[-1, +1]$  will be reported. Following the previous literature, Patell (1976)  $t$ -statistic and Boehmer et al. (1991)  $t$ -statistic are computed; the proportion of positive abnormal returns is also reported.

Finally, in order to test the robustness of the outcome, CARs are computed also through the market adjusted model. The results, reported in the Appendix, are generally qualitatively consistent with those of the market model.

## 5. Results

In the following, results of the estimation of abnormal returns are reported for both the subsample of upgrades/downgrades and the subsample including watches only.

### 5.1 Upgrades and Downgrades

Results in Tabb. 3 and 4 allow to answer positively to the first hypothesis to be investigated: upgrades and downgrades affect differently stock prices and such difference is statistically significant.

TAB. 3

AVERAGE ABNORMAL RETURNS ON RATING CHANGE ANNOUNCEMENT<sup>1</sup>  
(MARKET MODEL ESTIMATES)

SAMPLE	DAY = 0		DAY = 1	
	DOWNGRADES	UPGRADES	DOWNGRADES	UPGRADES
ALL	-0.037 (-0.17)	0.158 (0.56)	<b>-0.47</b> (2.27)	<b>0.51</b> (1.68)
N	107	62	107	62
ANTICIPATED	-0.111 (-0.43)	0.163 (0.47)	<b>-0.592</b> (2.14)	<b>0.753</b> (2.00)
N	73	43	73	43
UNANTICIPATED	0.12 (0.30)	0.15 (0.31)	-0.20 (-0.76)	-0.02 (-0.03)
N	34	19	34	19
CONTAMINATED	0.022 (0.09)	0.332 (0.80)	<b>-0.781</b> (2.56)	0.425 (1.05)
N	55	28	55	34
UNCONTAMINATED	-0.016 (-0.04)	-0.067 (-0.15)	-0.198 (-0.65)	<b>0.631</b> (1.32)
N	49	28	49	34
SECTOR OF THE ISSUER				
FINANCIAL	-0.034 (-0.11)	0.132 (0.43)	<b>-0.411</b> (1.64)	0.483 (1.45)
N	78	53	78	53
INDUSTRIAL	-0.064 (-0.20)	0.323 (0.40)	<b>-0.642</b> (1.68)	0.728 (0.85)
N	29	9	29	9
REASONS				
EARNING PROSPECTS	-0.141 (-0.42)	0.172 (0.43)	-0.012 (-0.05)	0.311 (0.77)
N	49	27	49	27
MERGER/ ACQUISITION	-0.092 (-0.23)	0.244 (0.52)	<b>-1.074</b> (-2.36)	0.546 (1.08)
N	31	29	31	29
OTHER	-1.544 (-0.98)	-0.310 (-0.57)	0.578 (0.79)	1.278 (1.37)
N	3	6	3	6

<sup>1</sup>Percentage values. T values are in parenthesis. Abnormal returns significant at least at the 10 percent level are in bold.

The abnormal returns (AAR) on rating change announcement on day 0 (the event day) and on day 1 are reported in Tab. 3. Interestingly, the AAR on the event day are always statistically insignificant, while on day 1 they turn out to be significantly different from zero for both downgrades and upgrades when the whole sample is considered (equal respectively to -0.47 and +0.51%).

STOCK PRICE REACTION TO RATING CHANGES<sup>1</sup>  
(MARKET MODEL ESTIMATES)

WINDOW	<i>WHOLE SAMPLE</i>			
	DOWNGRADES		UPGRADES	
[−20 −11]	-1.013 (-1.34, -1.35) (0.46)		1.161 (0.89, 1.12) (0.53)	
[−10 −2]	0.092 (0.46, 0.49) (0.56)		0.519 (0.51, 0.50) (0.53)	
[−1 +1]	<b>-0.619</b> (-2.32, -2.22) (0.46)		0.582 (1.00, 1.14) (0.53)	
[+ 2 +10]	-0.122 (-0.93, -0.66) (0.49)		<b>1.843</b> (2.26, 2.38) (0.76)	
[+11 +20]	0.122 (1.29, 1.04) (0.52)		<b>0.941</b> (1.21, 1.60) (0.63)	
<i>N</i>	107		62	
<b>ANTICIPATED VERSUS UNANTICIPATED RATING ACTIONS</b>				
	DOWNGRADES		UPGRADES	
	ANNOUNCED	NON-ANNOUN.	ANNOUNCED	NON-ANNOUN.
[−20 −11]	-1.223 (-1.48, -1.35) (0.49)	-0.563 (-0.33, -0.35) (0.38)	1.353 (0.84, 0.99) (0.56)	0.728 (0.42, 0.51) (0.47)
[−10 −2]	-0.068 (0.05, 0.05) (0.53)	0.438 (0.74, 0.80) (0.62)	0.616 (0.20, 0.22) (0.76)	0.297 (0.62, 0.50) (0.47)
[−1 +1]	<b>-0.717</b> (-2.12, -1.98) (0.47)	-0.409 (-1.00, -1.00) (0.44)	<b>0.820</b> (1.74, 1.73) (0.58)	0.043 (0.20, 0.19) (0.42)
[+ 2 +10]	<b>-0.649</b> (-1.74, -1.12) (0.47)	1.010 (0.89, 0.85) (0.53)	<b>1.173</b> (1.65, 1.76) (0.70)	<b>3.357</b> (2.16, 2.68) (0.89)
[+11 +20]	-0.021 (1.09, 0.84) (0.53)	0.430 (0.69, 0.62) (0.50)	<b>1.043</b> (1.67, 1.53) (0.62)	0.711 (0.74, 0.73) (0.63)
<i>N</i>	73	34	43	19
<b>CONTAMINATED VERSUS UNCONTAMINATED RATING ACTIONS</b>				
	DOWNGRADES		UPGRADES	
	YES	NO	YES	NO
[−20 −11]	-0.292 (-0.64, -0.74) (0.55)	-1.742 (-1.23, -1.00) (0.39)	0.745 (0.59, 0.78) (0.53)	1.666 (0.74, 0.79) (0.54)
[−10 −2]	-0.082 (-0.02, -0.02) (0.53)	0.473 (0.89, 0.86) (0.61)	0.608 (0.78, 0.65) (0.53)	0.410 (0.10, 0.14) (0.54)
[−1 +1]	<b>-0.943</b> (-2.52, -2.49) (0.49)	-0.186 (-0.55, -0.50) (0.45)	0.772 (1.01, 1.16) (0.59)	0.351 (0.37, 0.41) (0.46)
[+ 2 +10]	<b>-1.223</b> (-2.57, -1.79) (0.47)	1.018 (1.22, 1.30) (0.49)	<b>1.331</b> (1.64, 1.65) (0.71)	<b>2.463</b> (1.58, 1.77) (0.82)
[+11 +20]	-0.835 (0.26, 0.18) (0.49)	1.233 (1.63, 1.53) (0.57)	<b>1.221</b> (1.72, 1.88) (0.71)	0.602 (0.62, 0.93) (0.54)
<i>N</i>	58	49	34	28

<sup>1</sup>Percentage values. In parenthesis, Patell (1976) t-statistics, Bohemer et al. (1991) t-statistic and percentage of positive abnormal returns.

In the event window  $[-1, +1]$  only CARs for downgrades are statistically significant although tiny ( $-0.62\%$  versus  $+0.58\%$ ). Among the preannouncement windows, CARs are never statistically significant. As post announcement windows, upgrades exhibit a drift, which might signal a phenomenon of market under-reaction (more precisely,  $1.84\%$  and  $0.94\%$  in the windows  $[+2, +10]$  and  $[+11, +20]$  respectively).

As far as concerns the breakdown of anticipated versus unanticipated rating changes, the AAR are significantly different from zero at day 1 only for the sample of the rating actions which were preceded by a credit watch in the same direction ( $-0.59\%$  for the subsample of downgrades and  $+0.75\%$  for the sample of upgrades; see Tab. 3).

The stock price effects of rating actions in the window  $[-1, +1]$  turns out to be higher for those anticipated by a watch notice, which are also the only ones statistically significant: more precisely, CARs amount to  $-0.72\%$  for announced downgrades and to  $+0.82\%$  for announced upgrades (versus  $-0.41\%$  and  $+0.04\%$  recorded for unanticipated events; see Tab. 4). The only exception comes from the positive abnormal returns estimated for the upgrades in the window  $[+2, +10]$ : CARs of the announced rating actions amount to  $1.17\%$  versus  $3.36\%$  recorded for the other group. These results are different from those reported by Gropp and Richards (2001) for a sample of European banks. The authors find out that, after splitting observations into subgroups sampled by reason and by anticipation of the change, for a few subgroups announced rating actions affect stock prices less than unanticipated ones. Following Gropp and Richards (2001), CARs were computed for subsamples of observations, drawn by anticipation and by reason of the rating change. Although most of these subsamples are too small for statistical inference, it is worth mentioning that the results (not reported in the paper) show that within the downgrades due to a deterioration of the firm's earning prospects CARs are greater (and statistically significant) only for the group of unanticipated rating actions. Apart from this check, it is worth noticing that the significance of the abnormal returns of announced rating changes only may be explained by the fact that most of the anticipated rating actions (more precisely, 100 out of 143) are also contaminated by a concurrent disclosure, which might have driven the results.

The impact of the concurrent release of information clearly stems out from the comparison between contaminated and uncontaminated subsamples: almost always, both downgrades and upgrades (although with reference to different temporal windows) exhibit higher CARs when

there were relevant news stories around the event window. In particular, for contaminated downgrades the  $Car[-1, +1]$  and the  $Car[+2,+10]$  are higher than those of the uncontaminated events and the only significant ( $Car[-1, +1]$  is equal to -0.94%, versus -0.19%; see Tab. 4). For contaminated upgrades, statistically significant abnormal returns are recorded in the two post announcement windows, but for  $Car[+2,+10]$  uncontaminated upgrades show a stronger price impact (+2.46% versus +1.33%). Overall, these results imply that stock prices are affected mainly by the news in the public domain released around the rating change rather than by the rating change itself. The evidence on the AAR, however, is not clear-cut: at day 1, the abnormal returns corresponding to downgrades are statistically different from zero only for the contaminated subsample (-0.78%), but the abnormal returns corresponding to upgrades are statistically different from zero only for the uncontaminated sample (+0.63%; see Tab. 3).

The impact of rating changes seems to be different depending on the sector of the issuer only for downgrades (Tab. 5). The results show a  $Car[-1, +1]$  which is lower for financial than for industrial firms: however only the former, equal to -0.48% versus -0.99%, is statistically significant. This evidence however may not be regarded as conclusive, given the relatively lower number of events related to industrial firm (namely, 29 out of 107).

TAB. 5

CAR OF RATING ACTIONS BY SECTOR OF THE ISSUER AND BY REASON IN THE WINDOW [-1 +1] <sup>1</sup> (MARKET MODEL ESTIMATES)		
	RATING ACTION	
	DOWNGRADES	UPGRADES
<b>CAR BY SECTOR OF THE ISSUER</b>		
FINANCIAL <sup>2</sup>	<b>-0.482</b> (-1.75, -1.66) (0.45)	0.553 (0.85, 0.95) (0.51)
INDUSTRIAL	-0.986 (-1.58, -1.53) (0.48)	0.750 (0.55, 0.57) (0.67)
<i>N</i>	78 FIN AND 29 IND	53 FIN AND 9 IND
<b>CAR BY REASON OF THE RATING ACTION</b>		
EARNING PROSPECTS	-0.384 (-1.02, -1.04) (0.43)	0.191 (0.39, 0.43) (0.44)
MERGER/ACQUISITION	<b>-1.068</b> (-2.24, -1.97) (0.55)	0.814 (0.94, 1.08) (0.59)
OTHER	-0.529 (-0.96, -0.79) (0.41)	1.219 (0.32, 0.38) (0.67)
<i>N</i>	49 EP, 31 M/A, 27 OTH.	27 EP, 29 M/A, 6 OTH.

<sup>1</sup>Percentage values. <sup>2</sup>Includes banks and insurance companies.

As to the reason of the rating action, it seems to matter only for downgrades given that the abnormal negative returns are statistically significant for the “mergers and acquisitions” subsample ( -1.07% in the window [-1, +1]; see Tab. 5). It is important to recall that this subsample mainly includes contaminated rating actions: therefore, the price reaction might be led primarily by the concurring disclosure of the event prompting the rating change.

## 5.2 Rating Watches

As mentioned above, rating watches are used not only to discriminate between anticipated and unanticipated rating actions but also as events themselves. The analysis described in the previous paragraph was therefore replicated for the sample of the additions to the watch list (Tab. 6).

TAB. 6

CAR OF THE RATING WATCH <sup>1</sup>		
(MARKET MODEL ESTIMATES)		
WATCH		
WINDOW	NEGATIVE	POSITIVE
	<i>WHOLE SAMPLE</i>	
	-0.574	0.988
	(-1.00, -1.02)	(0.40, 0.62)
	(0.45)	(0.53)
	0.023	1.311
	(0.20, 0.20)	(0.80, 0.60)
	(0.51)	(0.59)
	<b>-1.345</b>	0.616
	(-2.94, -1.95)	(0.96, 0.56)
	(0.54)	(0.41)
	-0.253	-2.047
	(0.32, 0.29)	(-1.39, -1.18)
	(0.45)	(0.23)
	-0.308	-0.812
	(-0.68, -0.62)	(-0.74, -0.83)
	(0.46)	(0.35)
N	65	17
	<i>SUBSAMPLE OF NEGATIVE RATING WATCHES</i>	
	CONTAMINATED	UNCONTAMINATED
	0.959	<b>-1.207</b>
	(-0.22, -0.15)	(-1.67, -1.76)
	(0.42)	(0.39)
	-0.459	0.223
	(-0.49, -0.86)	(-0.34, -0.28)
	(0.52)	(0.50)
	<b>-2.693</b>	<b>-1.474</b>
	(-3.30, -2.62)	(-2.47, -2.65)
	(0.37)	(0.30)
	<b>-5.818</b>	0.292
	(-4.06, -3.06)	(-1.09, -0.56)
	(0.37)	(0.46)
	-5.192	0.262
	(-3.86, -3.06)	(1.03, 0.56)
	(0.37)	(0.46)
N	19	46

<sup>1</sup>Percentage values



In particular, only negative rating watch exhibit a significant  $Car[-1, +1]$  (equal to  $-1.34\%$ ; see Tab. 6); moreover negative watches which are preceded by concurring information are associated with a higher price impact (about  $-2.7\%$  against  $-1.5\%$  for the uncontaminated subsample). Again, this latter result might strengthen the inference that stock prices react basically to the public announcement of the event underlying the rating action rather than to the rating change itself. Given the small sample size of the contaminated events (namely, 19 events), however, this conclusion might not be regarded as robust. Moreover, given that a statistically and quantitatively significant  $Car[-1, +1]$  is recorded also for the uncontaminated subsample, negative watches might be regarded as conveying information to the market in any case.

Finally, it is worth noticing that within the sample of agencies' actions implying bad news for the rated firms, stock prices seem to react more to negative watches than to downgrades.

## **6. Conclusions**

The analysis of the effects on stock prices of rating actions for a sample of 299 rating changes by Fitch, Moody's and Standard&Poor's involving Italian firms showed that, overall, stock price reactions to rating change announcements are quite moderate or statistically insignificant. The market acknowledges an information content only to downgrades and additions to the negative credit watch list. If any, the abnormal returns seem to be driven mainly by concurrent disclosure concerning the reason underlying the rating action.

Overall, rating agencies do not seem to act on the basis of private information. This evidence, although corroborating the hypothesis that rating agencies act in line with the financial market regulation prohibiting selective disclosure of significant corporate events, supports the argument that the information content of ratings is modest.

The absence of pre-announcement abnormal returns, even for the contaminated subsample, however, might be an indirect evidence of a timely action of the rating agencies when they move on the basis of a news which is already in the public domain. It is worth noticing, moreover, that the events prompting the rating change are probably only those affecting the

long-term conditions of the issuers. In particular, agencies rate through the cycle, that is they estimate the borrowers' condition at the worst point in an economic or industry cycle; therefore, rating changes should take place only when firms' long term conditions are muted (Treacy and Carey, 1998). This might explain why ratings are not as volatile as stock prices, given that these latter may reflect also short term investors' strategies.

On policy grounds, the evidence on the information content of ratings suggest that they cannot be used as a tool of timely information and protection of small investors. Notwithstanding the role that they can play as a summary indicator of an issuer's conditions, the protection of retail investors has to be pursued through different instruments, such as disclosure obligations for firms and rules of business conduct for intermediaries.

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## Appendix

In the following, estimation results based on the market adjusted model are reported.

TAB. A1

AVERAGE ABNORMAL RETURNS ON RATING CHANGE ANNOUNCEMENT <sup>1</sup>				
(MARKET ADJUSTED MODEL ESTIMATES)				
SAMPLE	DAY = 0		DAY = 1	
	DOWNGRADE	UPGRADE	DOWNGRADE	UPGRADE
WHOLE	-0.158 (-0.70)	0.124 (0.42)	<b>-0.442</b> (-2.09)	<b>0.559</b> (1.85)
N	107	62	107	62
ANTICIPATED	-0.163 (-0.60)	0.121 (0.34)	<b>-0.517</b> (-1.84)	<b>0.799</b> (2.19)
N	73	43	73	43
UNANTICIPATED	-0.148 (-0.36)	0.130 (0.25)	-0.281 (-0.99)	0.01 (0.03)
N	34	19	34	19
CONTAMINATED	0.041 (0.15)	0.244 (0.58)	<b>-0.651</b> (-2.17)	0.442 (1.10)
N	55	28	55	34
UNCONTAMINATED	-0.369 (-1.03)	-0.022 (-0.05)	-0.221 (-0.74)	<b>0.702</b> (1.50)
N	49	28	49	34
SECTOR OF THE ISSUER				
FINANCIAL	-0.208 (-0.72)	0.121 (0.39)	-0.365 (-1.45)	<b>0.548</b> (1.70)
N	78	53	78	53
INDUSTRIAL	-0.031 (-0.08)	0.140 (0.17)	<b>-0.651</b> (-1.65)	0.626 (0.68)
N	29	9	29	9
REASONS				
EARNING PROSPECTS	-0.273 (-0.79)	0.222 (0.52)	-0.081 (-0.27)	0.433 (1.07)
N	49	27	49	27
MERGER/ACQUISITION	-0.160 (-0.38)	0.172 (0.36)	<b>-0.832</b> (-1.87)	0.569 (1.13)
N	31	29	31	29
OTHER	-0.051 (-0.12)	-0.550 (-0.87)	-0.652 (-1.76)	0.011 (1.17)
N	3	6	3	6

<sup>1</sup>Percentage values. T values are in parenthesis. Abnormal returns significant at least at the 10 percent level are in bold.

STOCK PRICE REACTION TO RATING CHANGES<sup>1</sup>  
(MARKET ADJUSTED MODEL ESTIMATES)

WINDOW	<i>WHOLE SAMPLE</i>			
	DOWNGRADES		UPGRADES	
[-20 -11]	-1.292 (-2.29)		0.446 (0.60)	
[-10 -2]	-0.260 (-0.50)		0.207 (0.28)	
[-1 +1]	<b>-0.732</b> (-2.07)		0.521 (1.20)	
[+2 +10]	-0.312 (-0.58)		<b>1.742</b> (2.29)	
[+11 +20]	-0.214 (-0.42)		<b>0.384</b> (0.64)	
<i>N</i>		107		62

  

	<i>ANTICIPATED VERSUS UNANTICIPATED RATING ACTIONS</i>			
	DOWNGRADES		UPGRADES	
	ANTICIPATED	UNANTICIPATED	ANTICIPATED	UNANTICIPATED
[-20 -11]	-1.570 (-1.99)	-0.878 (-1.07)	1.058 (1.04)	-0.892 (-0.93)
[-10 -2]	-0.160 (-0.24)	-0.482 (-0.56)	0.256 (0.27)	0.095 (0.08)
[-1 +1]	<b>-0.684</b> (-2.01)	<b>-0.834</b> (-1.64)	0.727 (1.46)	0.054 (0.06)
[+2 +10]	<b>-1.161</b> (-1.57)	0.399 (0.50)	1.112 (1.31)	<b>3.316</b> (3.34)
[+11 +20]	-0.389 (-0.62)	0.161 (0.17)	0.481 (0.71)	0.167 (0.13)
<i>N</i>	73	34	43	19

  

	<i>CONTAMINATED VERSUS UNCONTAMINATED RATING ACTIONS</i>			
	DOWNGRADES		UPGRADES	
	YES	NO	YES	NO
[-20 -11]	-2.080 (-2.24)	-0.547 (-0.84)	0.485 (0.42)	0.398 (0.44)
[-10 -2]	-0.238 (-0.31)	-0.476 (-0.59)	0.352 (0.30)	-0.094 (-0.11)
[-1 +1]	-0.617 (-1.24)	<b>-0.840</b> (-1.66)	0.583 (1.00)	0.446 (0.67)
[+2 +10]	0.521 (0.71)	-1.100 (1.43)	<b>2.070</b> (1.79)	<b>2.582</b> (2.68)
[+11 +20]	0.782 (1.08)	<b>-1.468</b> (-2.06)	<b>0.942</b> (1.66)	1.191 (1.33)
<i>N</i>	58	49	34	28

<sup>1</sup>Percentage values. T-statistic in parenthesis.

TAB. A.3

CAR OF RATING ACTIONS BY SECTOR OF THE ISSUER  
AND BY REASON IN THE WINDOW [-1 +1]<sup>1</sup>  
(MARKET ADJUSTED MODEL ESTIMATES)

	RATING ACTION	
	DOWNGRADES	UPGRADES
<b><i>CAR BY SECTOR OF THE ISSUER</i></b>		
FINANCIAL <sup>2</sup>	-0.633 <u>(-1.56)</u>	0.563 <u>(1.23)</u>
INDUSTRIAL	-0.998 <u>(-1.37)</u>	0.274 <u>(0.20)</u>
<i>N</i>	78 FIN AND 29 IND	53 FIN AND 9 IND
<b><i>CAR BY REASON OF THE RATING ACTION</i></b>		
EARNING PROSPECTS	-0.602 <u>(-1.22)</u>	0.340 <u>(0.51)</u>
MERGER/ACQUISITION	-0.887 <u>(-1.23)</u>	0.639 <u>(0.98)</u>
OTHER	-0.789 <u>(-1.10)</u>	0.766 <u>(0.57)</u>
<i>N</i>	49 EP, 31 M/A, 27 OTH.	27 EP, 29 M/A, 6 OTH.

<sup>1</sup>PERCENTAGE VALUES. <sup>2</sup>INCLUDES BANKS AND INSURANCE COMPANIES.

TAB. A.4

CAR OF THE RATING WATCH<sup>1</sup>  
(MARKET ADJUSTED MODEL ESTIMATES)

<i>WHOLE SAMPLE</i>		
WINDOW	NEGATIVE WATCH	POSITIVE WATCH
[- 20, -11]	-1.018 (-1.08)	0.701 (0.49)
[- 11, -2]	-0.358 (-0.49)	0.963 (0.49)
[- 1, +1]	<b>-1.318</b> (-1.40)	0.689 (0.53)
[+2, +10]	-0.773 (-0.98)	-1.670 (-0.84)
[+11, +20]	-0.815 (-0.96)	-0.390 (-0.23)
<i>N</i>	65	17
<i>NEGATIVE RATING WATCHES</i>		
	CONTAMINATED	UNCONTAMINATED
[- 20, -11]	0.949 (0.37)	<b>-1.831</b> (-2.24)
[- 11, -2]	-0.927 (-1.26)	-0.123 (-0.12)
[- 1, +1]	<b>-3.116</b> (-2.00)	<b>-0.575</b> (-0.50)
[+2, +10]	-4.153 (-3.54)	0.623 (0.67)
[+11, +20]	-0.737 (-0.59)	-0.900 (-0.88)
<i>N</i>	19	46

<sup>1</sup>Percentage values