THE CONTENT OF REPORTS ON ITALIAN STOCKS.

DO EVALUATION METHODS MATTER?

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April, 2006

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ABSTRACT

The paper presents an empirical study on the content of reports on Italian stocks. We collected 4,603 reports regarding 29 blue chips listed in Italian stock market and released during years 2000 – 2003 by important brokers and investment firms. We carefully examined each report to find out the evaluation method used to get the final recommendation. The first puzzling finding is that for most of reports (about 70%) it is not possible to understand clearly the evaluation method used. This behaviour is coherent only with a very strong reputation effect, so that it does not matter why an analyst says something but only what he says and who he is. Then we restricted the analysis to reports whose main evaluation method was elicit. We divided evaluation methods into two main categories: the one based on market ratios and the one on fundamental analysis, that is the in-depth estimation of future profits and cash flows. The two methods occur with a quite similar proportion, but the year by year approach shows that the situation has changed through time. While in year 2000 market ratios were above fundamental analysis, in the following three years the weight of market ratios has constantly declined and in year 2003 the position was reversed. At last, we assessed whether the evaluation methods have some impact on the estimates, measured by recommendation's *delta ((Target price – Current price) / Current price)*. But we did not find any significant relation: it doesn't matter if the report is based mainly on supposed original estimates, which is the typical feature of fundamental analysis, or on well known market data. The quality and the value of a report, if there are any, don't rely on the evaluation method used.

Classification codes: 210, 330, 350.

I. INTRODUCTION AND LITERATURE REVIEW

Financial analysts play a key role in the process of producing and releasing economic and financial disclosure. These professionals "filter" the information released by the firms and insert it in their own evaluation process. In particular, the elaboration and the diffusion of the information represent the output of the specific activity of an analyst that is the production of the reports. Due to the key role of the financial analysts, their behaviour should be transparent and correct as much as possible, even if to date this objective has only been partially achieved. There is an abundant literature concerning analysts, their behaviour and their recommendations, but as far as we know there are few studies focusing on an in-depth assessment of the whole content of their reports. Our paper starts from a careful reading of each report to find out the evaluation methods used to carry out the final recommendation. Then we examine the relation between evaluation methods and the final recommendation.

Traditionally, a large part of literature has mainly focused on the role of the financial analysts, defined as "information brokers". It has studied the impact on the capital market of the disclosure of the analysts' reports information. Which type of specific information do we refer to? Reviewing the literature, mainly to the forecasts on earnings and/or their updating, to investment recommendations and to the target prices suggested by the financial analysts.

It has been documented that historically the financial analysts forecasts have to be considered "price informative": for example, Givoly e Lakonishok [1980] or Griffin [1976] have documented relevant abnormal returns at the same time as earning forecast revisions were released.

So more recent studies have mainly focused on the analysis of a possible link between the forecast revisions and the short term abnormal returns. Lys e Sohn [1990], as an example, demonstrate that the forecasts of each analyst are price informative, despite the fact they are preceded by other types of disclosures, including the forecast revisions of different analysts. Stickel [1992] highlights that analyst members of II-All American team have compiled more accurate forecasts producing 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 frame of the monitoring up to two years after the time of the revision and detect a persistent price drift in each of the two monitored years.

Furthermore, investors' reactions to the forecast revisions seem to be related to factors dependent on either the analysts or their own forecasts, such as: forecast timeliness, analysts experience, broker size and analysts coverage. Gleason and Lee [2003] demonstrate that the analyst's reputation influences the speed of the price adjustments to the new forecasts. The market

reaction is always immediate to forecasts issued by "famous" analysts of the "Institutional Investor All-Star" or those of the " Wall Street Journal Earnings Estimators". Moreover, the price reaction of the firms covered by a low number of analysts is weaker when compared to firms covered by a higher number of analysts.

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 related stock. From a jointed analysis of the forecast/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. 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, Kothari and Weber [2002] argue that financial analysts' reports are "price informative". More precisely, 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 appear to be more effective when there is bad news 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. Examining observing the time immediately before and after the recommendations changes, extra returns are registered after the recommendations. Based on these results, it is demonstrated that the recommendations and revisions have a great influence on the stock prices, both at the time of the revision and after. Barber, Lehavy, McNichols and Trueman [2001] take a step forward and measure the returns arising from the strategies built on the basis of analysts' recommendations.

Belcredi, Bozzi and Rigamonti [2003] focus instead on the Italian market and measure the short term impact on the market (15 days) caused by changes of the analysts recommendations

taken directly from the reports published on the Borsa Italiana S.p.A. website. The impact is measured through the calculation of the cumulative excess returns.

While the studies mentioned above evaluate the investors reaction to the analysts recommendations and forecasts, the Brav and Lehavy [2003] study observes 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 prices are informative both when considered alone and when linked to the forecasts and the recommendations, as substantial and abnormal returns occur immediately after the target revisions.

Nevertheless, many studies highlight and detect, at the same time, some biased behaviours of the financial analysts. The researchers often discuss and analyze some typical anomalies, i.e.:

a) too many favourable recommendations (for example buy or strong buy), compared to those unfavourable (sell or strong sell, for example);

b) a too high optimism in the published analyses;

c) evaluations systematically inefficient or biased.

There can be many possible reasons for this evidence. A first stream of researchers states that anomalies in the financial analyst's behaviour occur because of the conflicts of interest while a second stream tries to give a reasonable explanation of such events, referring to human psychology.

The Michaely and Womack [1999] study can be classified as belonging to the "first research stream". The authors, among the other issues analyzed, observe that at the time of an IPO, the underwriter company analysts (even though better informed) do not issue reports more accurate than the others. Instead, the underwriter company analysts are characterized by an excessive and unjustified optimism, probably related to the problems of conflict of interests. Furthermore, according to the Darrough and Russel [2002] results, bottom up analysts (those dedicated to one single firm), have some interest in maintaining good relationships with the management and are more inclined not to release bad news about the future growth of the firm. Richardson, Teoh and Wysocki [1999], instead, think anywhere that there is a sort of cooperation between analysts and firms in the so called "earnings game", with the aim of manipulating investor perception.

In regard to the second stream of research, (the one aiming to justify the financial analysts behaviour anomalies with psychology theories), it is worth mentioning the works by De Bondt and Thaler [1990], Abarbanell and Bernard [1992] and by Amir and Gonzac [1998]. While De Bondt and Thaler point out a systematic overreaction of the financial analysts, explained, according to the authors, through the irrational mechanisms driving all the people, Abarbanell and Bernard, on the contrary, point out a systematic under-reaction to the earnings announcements. Finally, in the Amir and Gonzach study, both under-reaction and overreaction are observed, including optimism. Both

anomalous behaviours depend on the irrational mechanisms driving the person. In the study, three heuristics influencing the evaluation processes used by the financial analysts are examined: the representativeness, associated to overreaction, the anchoring and adjustment, associated to under-reaction and the leniency, generating optimism.

Surveys 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), extracted for example from I/B/E/S or First Call or even from the financial analysts' reports themselves (see Belcredi, Bozzi Rigamonti's study [2003]), but they seldom look at the ground where these "synthesis results" come from (see, for example Barker [1999], Block [1999] or Rogers, Rodney, Grant [1997]).

As we pointed out at the beginning of the section, the main objective of our study is to look at the way a report is made, assuming that this is the best way to better understand the background logic, the foundations from which the report emanates, mainly recommendations and target prices, (specifically, evaluation methods). To date there are few studies adopting a focus similar to ours: for example, Barker [1999], and the prior research he reviewed, or Block [1999], look at the valuation models used by professional investors or financial analysts, but they adopt an interview-based-research. We know only two studies examining the valuation methods that analysts adopt in practice and using the content analysis of financial analysts' reports (see, Asquith, Mikhail, Au [2005] and Demirakos, Strong, Walker [2004]). Asquith, Mikhail, Au [2005], for example, examine the market reaction to all reports' elements (earnings forecasts, target prices, reccommendations, justifications given[1]). They find that the market reacts, also if the reports occur contemporaneously with other informations release[2]. When the report is a downgrade, the market places a grater reliance to its content than in the upgrade case. The analysts' justifications are important and they reduce or eliminate the significance of earnings forecasts' or reccommendations' revisions information. However, the market doesn't react differently depending on evaluation methodology used by analyst. Finally, the authors find that evaluation methods aren't correlated also with the probability to achieve the target prices.

II. THE THEORETICAL FRAMEWORK

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[1] They are informations on income statements, balance sheets, statements of cash flow, geographic, product or segment forecasts.

[2] The authors say that analysts' reports also "interpret" informations deriving from other sources and provide a new analysis to the investors.

Reports can be basically classified looking at:

a) the evaluation methods used (for example, market ratios, discounted cash flow and so on);

b) the parameters used (forecasts and evaluations, discount rates, market risk premium, etc.);

c) the final output thesis (basically recommendations and target prices).

We want to find out whether evaluation methods actually used by financial analysts to perform their analysis influence the information content of the reports. Asquith, Mikhail, Au [2005] examine the effects of evaluation methodology employed by analysts and find no correlation of the evaluation methods neither with the market reaction to a report release nor with their accuracy in predicting price target.

On one hand this paper provides a more in depth comprehension on which evaluation methods are used in the reports and on how they are combined in order to achieve the final output thesis. on the other hand the paper tries to verify if there is a link between the nature and the hierarchy of evaluation methods and the final output.

How we will discuss in the following sections, we analyze, on the one hand the distribution of evaluation methods adopted by financial analysts among the industries composing our sample, on the other hand the evaluation practices during the observed years. The evaluation methods, found out from the analyzed reports, are classified following a specific logic created for the purpose.

Our conceptual framework considers two groups of evaluation methods:

a) Fundamental methods: net asset methods (algebraic sum of assets' and liabilities' market values), financial methods, income methods, blended (composed) methods;

b) Market ratios.

This classification depends on the "working logic" of the method. Different from fundamental analysis, in fact, market ratios require an active market making fair prices (market is always right). On the contrary, a fundamental evaluation could be done without a market.[3]

In practice, for us, 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.

Given these issues, we wonder whether a link between the evaluation method and the final output thesis exists. If a relation exists, this will be of great interest because it would show that the investment recommendations or the target prices are linked to specific criteria used for the analysis.

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

Even if there is only a partial relation or no relation at all, nevertheless, it would be an interesting result. There could be several explanations for the latter result.

On one side, for example, one could argue that the missing relation means that every method employed by the analyst, being rational, should get the same result, expressed by the recommendation or by the target price.

On the other side one could think that the evaluation methods should be regarded as a "tool" for achieving a predetermined result. Bradshaw [2002], for example, finds that valuations based on price earnings ratios and expected growth are more likely to be used to support favourable recommendations, while qualitative analysis of a firm is more likely associated to less favourable recommendations. In other words, on the basis of this last hypothesis, the analyst evaluates the firm regardless of the best criteria to be used and only afterwards, ex post, he selects the method which better sustains and adheres to the expected result.

III. DATA AND SAMPLE DESCRIPTION

Our analysis is based on some elements characterising the reports. Unlike most of the studies available in the literature, such data have been taken directly from the reports written by financial analysts, with a careful and in depth reading. Up to the present, there are financial databases collecting earnings forecasts and analysts recommendations (e.g., I/B/E/S, First Call), but no one provides the typical information included in analysts' reports, such as valuation methodologies or other justifications for the recommendations. A typical analyst report is usually composed at least by:

a) a stock recommendation (such as strong buy, buy, hold, sell);

b) a target price;

c) a earnings forecasts' summary table.

Then, the report can be more exhaustive and include other additional information supporting the evaluation procedure (such as accounting forecasts, evaluation methods, qualitative analysis, actualization rates or market risk premium used, other justifications). The only way to find these information is to read the text of the reports and to code the contents by hand. Following this "explorative" procedure of the analyses, we built a unique database based on a rich set of different information elements that have been analyzed and classified.

Our database contains 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 1.

(Insert Table 1)

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 adopt 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.

With regard to the evaluation method, as shown in table 2 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 we personalized it and catalogued also some additional specifications about each kind of method. For example, we classified as "income 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-income method. With regard to the market ratio methods, we considered differently two approaches: a "naïve" approach when the analyst compares the companies' 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 also the qualitative methods, that is, the SWOT (Strenght, Weakness, Opportunities and Threats) analysis.

Finally, we pointed out if the method was applied wholly to the firm or only to one or more business units. The latter approach is known as "Sum of the Parts" (SOP) and it is based on the "breaking up" of a company in some parts. Each part is evaluated with a specific method and the total value of the firm is the sum of the values of the parts.

It must be underlined that in this way, we set up an original and unique analysts reports' classification criterion that could be affected by an excessive subjectiveness because the analysts

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[4] We are referring to the traditional evaluation models classification: net asset methods, financial methods, income methods, composed methods, market ratios methods.

[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 WEV, but g is equal to zero.

[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.

seldom explicate the specific evaluation method used or which is the most important and reliable method.

In order to reduce the issue of doubts and room for different interpretations, we decided not to classify such data, rather than classifying them with an arbitrary criterion. Following this rule, we named "main evaluation method" that one explicitly labelled in this way by the analyst himself or when the "prevalence" of the method regarding the others was evident without any doubt, otherwise the case has been classified as "unavailable main method". In the latter group there are those cases in which the firm's value was either an average of the values from different methods or clearly exploited as a sort of justification for the analysts' comments (even if only one method was used).

The selection of the reports has been conducted on the basis of the definition of a specific "observation range". More precisely, this research is based on all the actual reports produced in relation to firms listed and included in the Italian *MIB30* index[7], during a four year period, from 2000 to 2003 and published in the Italian Stock Exchange website (www.borsaitalia.it).

Our complete sample is composed by 4,603 reports written by 50 different investment banks or brokerage houses and covering 4 industries. The reports' sample is quite heterogeneous since we collected all the available reports in the selected period, without any other particular inclusion criteria.

Table 2, in the 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 "prevalent method".

(Insert table 2)

IV. RESULTS

In this section the equity analyst reports are classified looking at the evaluation methods used. In this way it is possible to perceive the preferences among the different methods and to investigate about the origin of such preferences.

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[7] *MIB30* is the index of the first 30 largest caps.

IV.I. THE PREFERRED EVALUATION METHOD

This paper has analyzed 4,603 equity reports. For 3,252 reports it has been not possible to understand which method of evaluation the analyst used or which was the "main" method among the different analysis refers to.[8] As many as 3,252 reports are in this position, so that the number of reports we can look at is "only" 1,351.

It is important to remark that in so many cases the reader of the report is not in a position to know which was the method and which were the parameters the analyst used in order to decide whether it is worth buying a share or not! This behaviour is coherent only with a very strong reputation effect, so that it does not matter why an analyst says something but only what he says and who he is.

Looking at the 1,351 remaining reports, the preferred evaluation method is based on fundamental analysis one, even if market ratios are very frequently used as "main" method (see Table 3).

(Insert Table 3)

The most used among the fundamental analysis methods are the financial ones (34.05%), followed by the net asset methods (15.10%), the income methods (3.70%) and the composed methods (3.63%).

IV.II. THE ORIGIN OF PREFERRED METHOD

In order to understand the driver which lets the analysts choose the "main " method, it is possible to provide a more accurate and analytical investigation, following three different approaches:

a) an industry approach, thinking that the dominance of a given industry may affect the choice of the method;

b) a yearly approach, thinking that the existing environmental situation, such as booming or recession conditions, may affect the choice of the method;

c) a broker approach, thinking that the specific competence and expertise of an analyst may let him prefer one method rather than another one.

Table 4 shows the situation for each of the four macro industries of listed companies.

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[8] Those reports do not provide analytical quantitative analysis, but only general description. So it is not possible to classify them.

(Insert Table 4)

For insurance and utilities, the use of the fundamental methods is dominant, while for banking and for manufacture, the market ratio methods are more frequent than the fundamental ones.

Insurance and utility stocks are often considered as "nearly bond" because the future cash flows that such companies will generate are usually positive and easier to be predicted, and the payout ratio is high and constant. So the financial methods, close to those usually used for bond valuation, are more widespread.

Banking and specially manufacture stocks refers to more dynamic companies, working in a much more competitive environment, exposed to a higher technological risk. So it is much more difficult for an analyst to forecast the future cash flows, profits and dividends he needs, in order to apply a method belonging to fundamental analysis. It is much easier for him to let the market do the job instead of him, using the growth rate of future cash flows, profits ad dividends implied in the market ratios.

The yearly approach shows that the situation has changed through time. Figure 1 clearly shows that in year 2000 analysts used the market ratio methods more often than the fundamental analysis ones. Then, in the following three years the weight of the market ratio methods has constantly declined while the weight of the fundamental analysis methods has increased. In any case, the use of the market ratio methods as the "main" method is still relevant.

(Insert Figure 1)

The evolution mentioned above is coherent with the dynamic of the market prices. As the market price bubble exploded it became evident that the market was not efficient; as a consequence it became also evident that the market can't do a better job than analysts.

Further investigations corroborate such a hypothesis. A cross section analysis between "industry and year" shows that:

- in 2000, utilities is the only industry with a higher weight of analyst reports based on a fundamental analysis method respect to the weight of analyst reports based on the market ratio method;

- in 2001, only banking and manufacture have a higher weight of analyst reports based on the market ratio method respect to the weight of analyst reports based on a fundamental analysis method, but the two are closer than in 2000;

- in 2003, in every industry the weight of the analyst reports based on a fundamental analysis method is higher than the weight of the analyst reports based on the market ratio method.

The broker approach can be useful now in order to verify whether it happened a real transformation in the attitude of the analysts towards the fundamental analysis methods or not.

In fact, the sample of this paper is open so that some broker house may enter the sample or leave it. So, instead of a transformation in the attitude of the analysts towards the fundamental analysis methods, it may be that the new comers are fundamental analysis lovers while the leaving ones were market ratio lovers.

In order to verify the absence of such a bias in our results, is it possible to classify the broker houses into two groups:

- Productive Brokers (PB), or broker houses which have been in the market for at least two years out of the four considered here and that have published at least five "valid" researches each of the two year;

- Non Productive Brokers (NPB), or broker houses which do not satisfy one or both of the conditions mentioned above.

Then we can calculate, for each broker house, the ratio:

$$\frac{Number\ of\ reports\ based\ on\ markets\ ratios\ methods}{Total\ number\ of\ ''valid''\ reports}$$

As long as the ratio stays constant, or almost constant, any change in the weight of the analyst reports based on the market ratio method with respect to the weight of analyst reports based on the fundamental analysis method is due to new comers that are fundamental analysis lovers or to leaving ones that were market ratio users. If the ratio declines, it means that the above mentioned evolution is due to a real higher attitude of analysts towards fundamental analysis methods.

Figure 2 shows that the ratio declines year by year either for the PB group and for the NPB group.

(Insert Figure 2)

Figure 3 shows the ratio trend for 'active' brokers also at the industry level. The trend was constant for insurance and banking, while manufacture had an anomalous 2003. Only utilities industry deviates from the standard, with an increase of the ratio in 2001 and a reduction in 2002 and in 2003, but the absolute level of the ratio is the lowest one as market ratio methods were non so frequently used from the beginning of the period.

It is evident now, that the change in analysts "main" evaluation method was pulled by the market situation. The problem is now to understand if the more frequent use of fundamental analysis methods lets analysts provide somehow different, and maybe more accurate, forecasts.

IV.III EVALUATION METHODS AND TARGET PRICE

Analysts perform their evaluations through several methods. In this section we attempt to examine the connection, if any, between the evaluation methods and the final recommendation, measured by the following expression:

$$Delta = (Target\ price - Current\ price\ )\ /\ Current\ price$$

As in the previous sections, we divided both brokers and evaluation methods into two categories: the observations lying in each category intersection are reported in Table 5. Since sometimes the target price is not quantified, the reports as a whole are less than in the previous section (894 instead of 1,351). We excluded from our analysis the non productive brokers (NPB) because, their reports are not enough to perform any interesting statistical test.

(Insert Table 5)

Table 6 reports descriptive statistics on the recommendation *delta* and evaluation methods: in all years save the 2001 the coefficient of variation of the recommendation *delta* with the market ratios is higher than the one with the fundamental analysis. It is not an obvious result: fundamental analysis should be based on original estimates of company's future profits and cash flows, while market ratios are more tightly dependent on the market prices which, of course, are observed, not estimated. Therefore we would expect a lower *delta* dispersion in the market ratios than in the fundamental analysis.

(Insert Table 6)

We used a linear regression model to find out the factors affecting *delta* values. *Delta* could depend on:

- o The object of analysis (what);
- o The timing of the report (when);
- o The analysis is carried out (how).

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In a few words we could say that we study the effects of "*what-when-how*" on reports' *delta*. These qualitative factors have been represented by dummy variables, as shown in Table 7. *What* and *when* are divided in four classes corresponding respectively to the companies' industry and to the issuing years: *how* has the two classes which the evaluation methods are divided in.

(Insert Table 7)

We run a regression of these variables on recommendations *delta* (see Table 8): only one coefficient concerning *when* is significant. The model selected with a stepwise procedure is shown in Table 9: the significant variables are the dummy representing the banking sector and the one representing the year 2002. The R^2 is very low (0.017), but the estimation power of the model is affected by the rather simple definition of the factors *what* and *when*. An analysis at a firm specific level and a more precise definition of the issuing date could reduce the noise in statistical analysis. In fact we obtained better results running the regression on each year separately (see Table 10-11-12-13). However, the most striking result is the irrelevance of the evaluation methods on the recommendations *delta*: it doesn't matter if the report is based mainly on supposed original estimates, which is the typical feature of the fundamental analysis, or on well known market data. The quality and the value of a report, if there are any, don't rely on the evaluation method used.

(Insert Table 8 - Table 9 - Table 10 - Table 11 - Table 12 – Table 13)

V. CONCLUSIONS

Our study points out that about 70% of stock analysts reports don't elicit clearly the evaluation methods used to carry out estimates. Investors must trust the recommendations whose in-depth check-up is not possible. The situation is coherent only with a very strong reputation effect, so that it does not matter why an analyst says something but only what he says and who he is.

With regards to the reports whose main evaluation method is made known, the ones based on fundamental analysis are slightly more frequent than ones based on market ratios. A year by year analysis shows a changing environment: while in year 2000 market ratios were more frequently used than fundamental analysis (60% versus 40%), in the following three years the weight of market ratios has constantly declined and in year 2003 the position was reversed (34.79% versus 65.21%). This trend is consistent with the dynamic of market prices. As the market price bubble exploded it became evident that the market was not efficient; therefore, it was clear that the market was not able to do the job instead of the analysts.

We tried to find out whether the evaluation methods have some impact on estimates, measured by recommendation's *delta* ((*Target price – Current price) / Current price*). As a first result, we must state that the coefficient of variation of *delta* in the reports with the market ratios is higher than the one with the fundamental analysis. It is not an obvious result: fundamental analysis should be based on the original estimates of company's future profits and cash flows, while market ratios are more tightly dependent on the market prices which, of course, are observed, not estimated. As a consequence, we would expect a lower *delta* dispersion in the market ratios than in the fundamental analysis. If the results of the fundamental analysis are quite convergent, as a first hypothesis, we could compare the stock analysts to the students who must solve a problem during an examination. They have studied the same books and have got the same information. Even if they don't copy the exercise they should get the same result. In such a case the fundamental analysis could not bring new relevant information on the stock market. It would be better to rely on the simpler and quicker method of market ratios. Otherwise we could think that the knowledge and the information could be used originally, enriching the stock and market forecasts, but the stock analysts prefer to imitate each other.

At last, we didn't find a statistical relation between *delta* and the evaluation methods. It is a striking result. It doesn't matter if the report is based mainly on supposed original estimates, which is the typical feature of fundamental analysis, or on well known market data. The quality and the value of a report, if there is any, don't rely on the evaluation method used. This result is consistent with the widespread habit of not eliciting evaluation methods. So our ironic conclusion is: why the analysts should give emphasis to what is not so important?

VI. TABLES AND FIGURES

General report features	• Report type • Report issuing date • Report size • Analysts's 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[9] • "Composed method": EVA, patrimonial-income method • market ratios: traditional (P/E, P/BV…), PEG, PBVG, EV, AV[10]
Parameters	• market risk premium • actualization rates • time horizon of forecasts
Final output synthesis	• investment recommendations • target prices

Table 1. Collected data classification.

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[9] 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.
[10] 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.

	PANEL A		PANEL B				PANEL C				PANEL D						
	WHO		*WHEN*				*WHAT*				*HOW*						
	Broker		2000	2001	2002	2003	Insurance	Banking	Manufacture	Utilities	Net asset method	Income 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

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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**

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
PANEL E							
Alleanza Assicurazio	Insurance	150	60	5	22	15	18
Assicurazioni Genera		183	56	9	10	22	15
RAS		160	46	4	11	16	15
TOTAL		493	162	18	43	53	48
B Pop Verona e Novar	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 2. "Reports'frequency in general, among sectors and years"

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EVALUATION METHOD	Frequency	Percent
Fundamental analysis	763	56,48%
Market ratios	588	43,52%
TOTAL	1351	100.00%

Table 3. Fundamental analysis vs market ratios.

	INSURANCE		BANKING		MANUFACTURE		UTILITIES	
Fundamental analysis	111	68.52%	187	49.34%	174	41,53%	291	74,42%
Market ratios	51	31.48%	192	50.66%	245	58,47%	100	25,58%
TOTAL	162	100.00%	379	100.00%	419	100.00%	391	100.00%

Table 4. Fundamental analysis versus market ratios: an industry analysis.

	EVALUATION METHOD	
	Market ratios	Fundamental analysis
Productive Brokers	519	682
Non productive Brokers	69	81

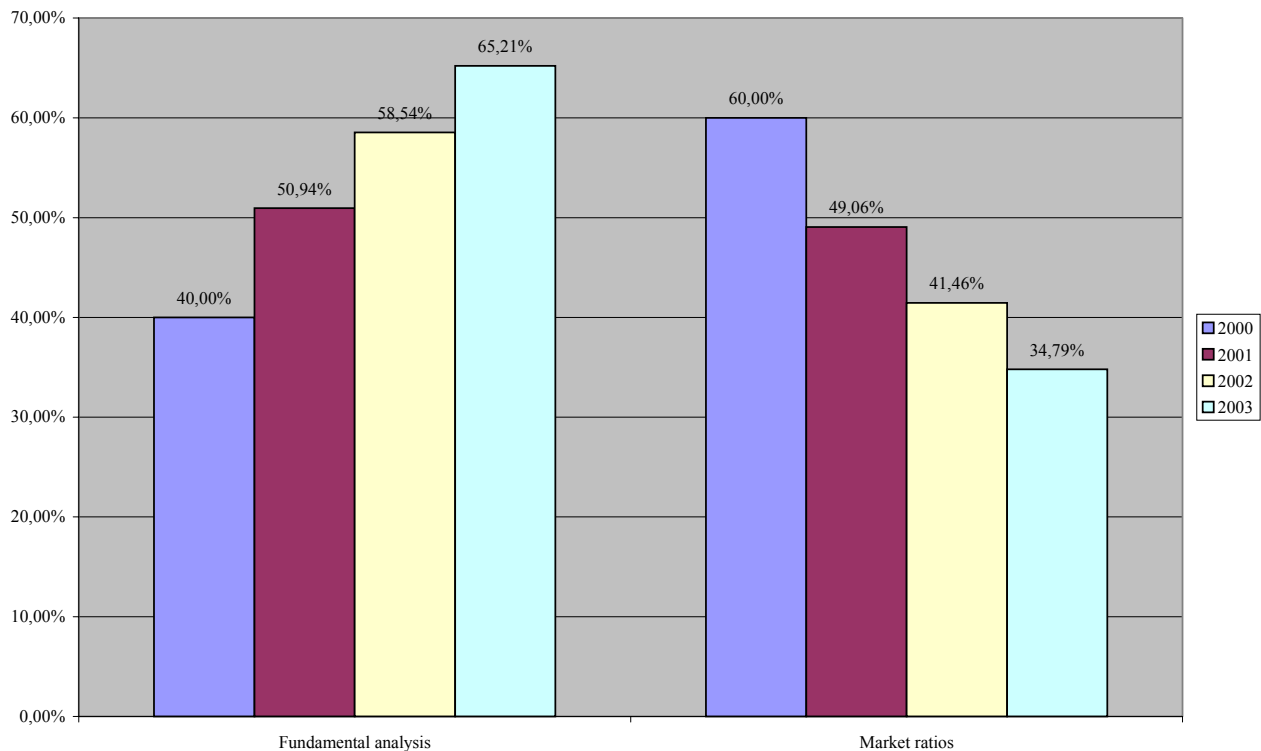**Table 5. Number of valid reports for each category intersection.**

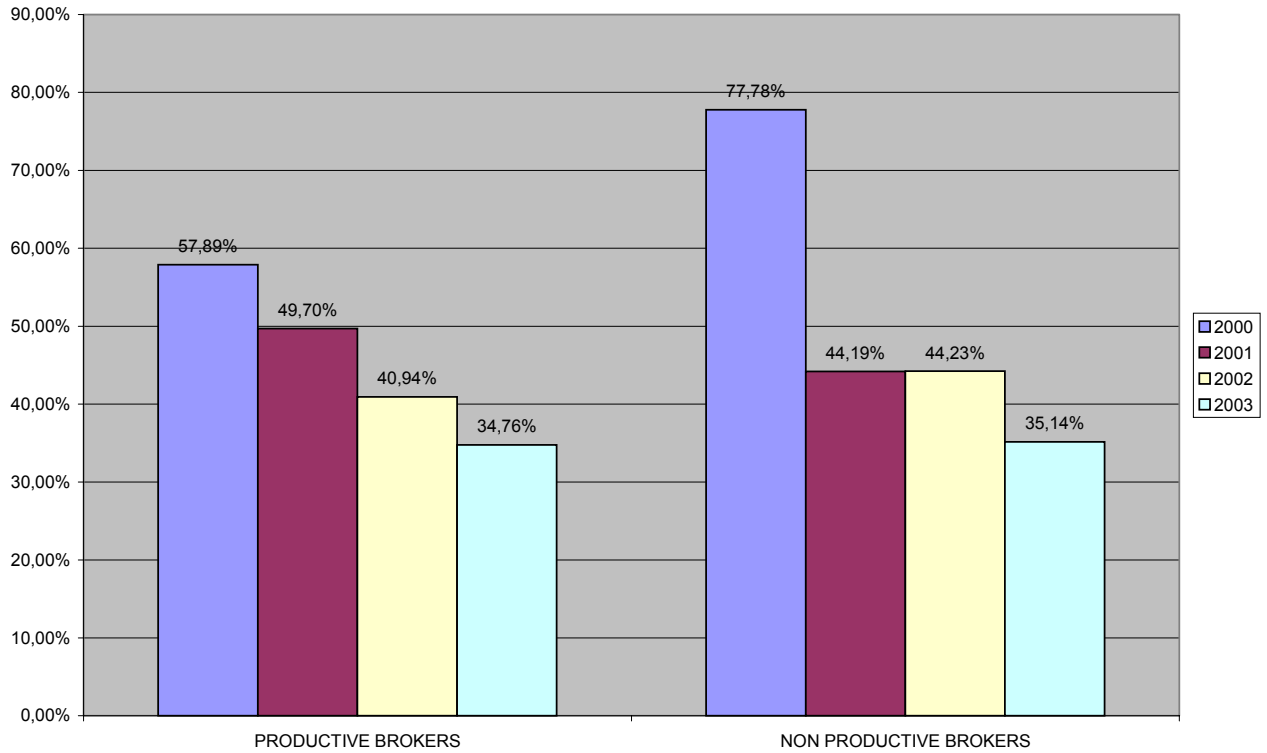**Figure 1. Fundamental analysis versus market ratios: a temporal analysis.**

Figure 2. The ratio trend: "Productive" versus "Non productive" brokers.
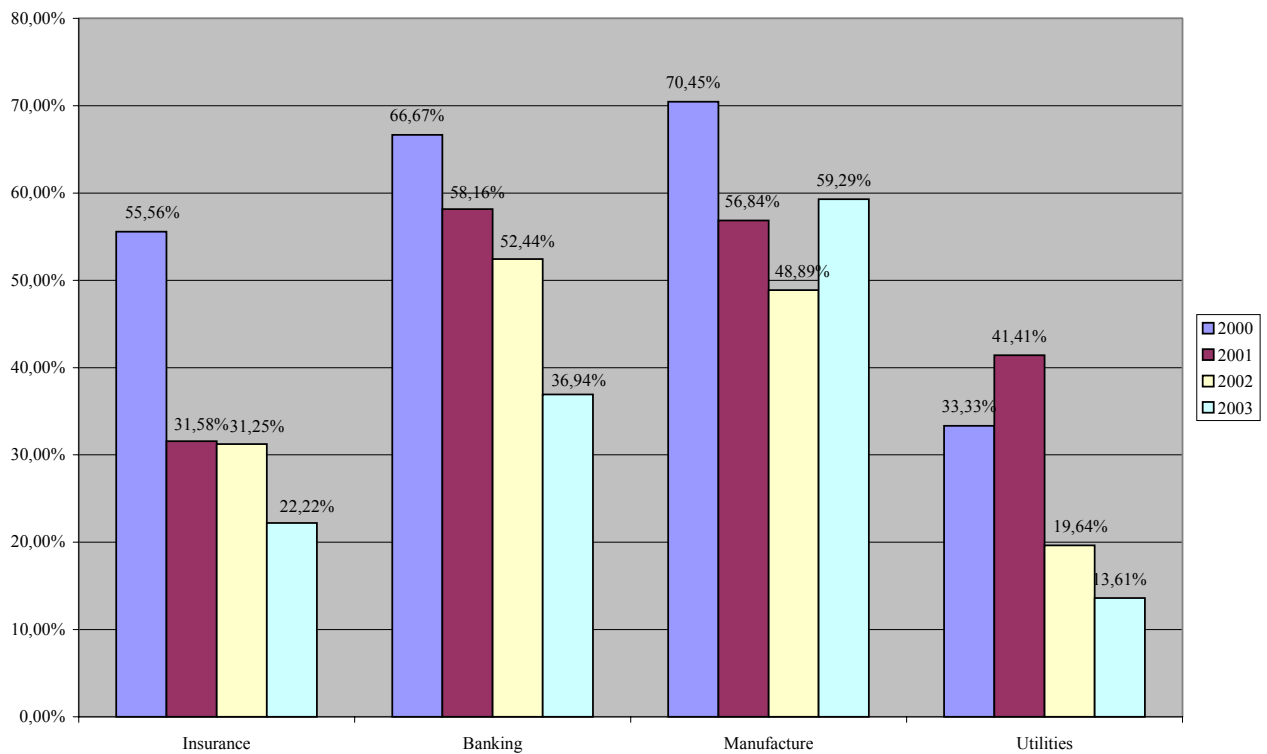
Figure 3. "The ratio trend for 'active' brokers: a temporal-industry analysis"

	MARKET RATIOS				FUNDAMENTAL ANALYSIS			
	Number	Mean	Std. Deviation	Coeff. of variation	Number	Mean	Std. Deviation	Coeff. of variation
2000	64	14.07%	21.33%	1.52	46	15.64%	14.42%	0.92
2001	120	15.82%	22.08%	1.40	110	16.64%	29.94%	1.80
2002	81	19.41%	27.47%	1.42	133	20.66%	22.41%	1.08
2003	107	11.53%	23.16%	2.01	233	16.91%	17.98%	1.06

Table 6. **The evaluation methods and the recommendation "delta".**

	HOW			
	Market ratios		Fundamental	
$D_{MARKET\ RATIOS}$	1		0	
	WHAT			
	Utilities	Banking	Manufacture	Insurance
$D_{UTILITIES}$	1	0	0	0
$D_{BANKING}$	0	1	0	0
$D_{MANUFACTURE}$	0	0	1	0
	WHEN			
	2003	2002	2001	2000
D_{2003}	1	0	0	0
D_{2002}	0	1	0	0
D_{2001}	0	0	1	0

Table 7. **The dummy variables in the linear regression model.**

	Intercept	$D_{MARKET\ RATIOS}$	$D_{MANUFACTURE}$	$D_{UTILITIES}$	$D_{BANKING}$	D_{2001}	D_{2002}	D_{2003}
Coeff.	0.178***	-0.0255	-0.0472	-0.0356	0.0153	0.0169	0.0529**	0.0040
Std. error	0.0302	0.0162	0.0255	0.0259	0.0258	0.0260	0.0265	0.0250
N = 894	R^2 = 0.025		Adj R^2 = 0.018					

Table 8. The regression on recommendation's *delta*.

	Intercept	$D_{BANKING}$	D_{2002}
Coeff.	0.142***	0.047***	0.047***
Std. error	0.010	0.017	0.018
N = 694	R^2 = 0.017	Adj R^2 = 0.015	

Table 9. The regression on recommendation's *delta*: the selected model.

	Intercept	$D_{UTILITIES}$
Coeff.	0,166***	-0,098**
Std. error	0,019	0,045
N = 110	R^2 = 0.043	Adj R^2 = 0.034

Table 10. The regression on recommendation's *delta*: the selected model-year 2000.

	Intercept	$D_{BANKING}$
Coeff.	0.124***	0.141***
Std. error	0.019	0.037
N = 230	R^2 = 0.060	Adj R^2 = 0.056

Table 11. The regression on recommendation's *delta*: the selected model-year 2001.

	Intercept	$D_{MANUFACTURE}$	$D_{UTILITIES}$
Coeff.	0.274***	-0.143***	-0.099**
Std. error	0.024	0.036	0.045
N = 214	R^2 = 0.072	Adj R^2 = 0.063	

Table 12. The regression on recommendation's *delta*: the selected model-year 2002.

	Intercept	$D_{UTILITIES}$
Coeff.	0.130***	-0.059***
Std. error	0.013	0.022
N = 340	R^2 = 0.021	Adj R^2 = 0.018

Table 13. The regression on recommendation's *delta*: the selected model-year 2003.

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