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Dynamics of analysts' coverage and the firms' information environment

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ABSTRACT

The main goal of this paper is to study analysts' coverage of stocks. Through a series of ordered probit regressions the paper studies the relationship between changes in coverage and the information environment of a firm.

Coverage decreases on average with higher errors in estimation. The data also shows that coverage is less likely to decrease for physically large firms, but more likely to decrease for firms with high lagged market value. Higher past revisions to the predictions also decrease coverage, showing a real cost of uncertainty.

1. Introduction

Financial analysts are essential players in the financial markets. Their main role is to gather information about stocks and interpret it so that investors can make more informed trading decisions. This way, they help improve efficiency through the dissemination of information regarding publicly traded firms. Hence, understanding their dynamics and decision-making is very important for those interested in the capital markets.[1]

The extent to which analysts can help the market depends on the costs of doing so and the demand for such information. This paper focuses on the effects of the costs generated by the information environment, while controlling for several important variables. The main goal is to evaluate to what extent information quality is important in determining allocation of research resources and in particular, to quantify the effects of information problems. In order to do that, this paper focuses on the changes in the number of analysts studying and predicting performance of publicly traded stocks.

Every analyst that wants to make predictions and recommendations on the value of a stock is followed in the IBES dataset. Most of these analysts work for consulting firms or for the research departments of brokerage firms. Profits are generated by selling the information or, as is documented by Juergens and Lindsey (2009), through increased trading (this is only valid for brokerage firms).

The empirical analysis is based on available information on analysts' coverage and information quality of US companies that are publically traded. A series of ordered probit regressions are run that evaluate the changes in coverage as a function of previous analysts' accuracy, revisions, and some firm specific and sector characteristics.

The paper finds that coverage decreases on average with higher previous errors in estimation, and physically large firms have smaller decreases in coverage as a result of inaccurate information. The data also shows those stocks with higher previous market values have higher probabilities of observing decreases in coverage. Higher past revisions also decrease coverage. In other words, when analysts make mistakes predicting performance of a firm, instead of increasing the coverage in order to reduce the size of their mistakes, research firms pull analysts away from those stocks.

Some of the closest related literature include Barth, Kasznik, and McNichols (2001) and other empirical work from the accounting literature such as Loh and Stulz (2009), Lang, Lins, and Miller (2003), and Barron, Kim, Lim, and Stevens (1998). Barth, Kasznik, and McNichols uses intangible assets as a measure of the amount of information about a firm that is not public, it employs this variable to explain coverage. The paper finds that coverage increases with a firm's expenses in Research and Development, advertising, firm size, growth and trading volume. The main difference between that paper and the result presented here is that it shows the firms with higher costs of coverage are also associated with greater incentives to be analyzed. My paper challenges these results by using different proxies for the information environment. I also explain why their paper found analysts' effort is decreasing in earnings variability.

Ackert and Hunter (1994) is another relevant paper on the subject. They highlight that analysts' forecasts tend to outperform time-series forecasting models. The authors describe analysts as showing a

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[1] Piotroski and Roulstone (2004) shows evidence of a measurable effect of analysts in the provision of information to the markets. Another example is Moshirian, Ng, and Wu which shows stock prices in emerging economies react strongly to analysts recommendation and revisions.

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"dynamic form of rationality" and show there is herding behavior among analysts as a consequence of risk avoidance, even when this implies acting against private information. Analysts also seem to be consistently overly optimistic. Trueman (1984) explains however that the more accurate the analyst, the smaller the incentives it has to herd. Das, Levine, and Sivaramakrishnan (1998) and Moshirian et al. (2009) also support the idea of optimistic analysts.[2]

Since most of the empirical papers on the topic belong to the accounting literature, they evaluate the significance of certain accounting measures in explaining stock coverage. Barth et al. (2001) is a clear example of this. Other papers such as Barron et al. (1998) have a closer approach to the finance and economics literature. They study how the properties of analysts' forecasts reveal some characteristics of the informational environment. My paper, using appropriate lags to avoid endogeneity, studies the inverse problem: which stocks do analysts research as a function of its informational environment. Lang et al. (2003) show that cross listing enhances a value through its effect on the information environment, measured in terms of coverage and accuracy.

The rest of the paper is organized as follows. The next section includes some background information with general facts about the market and incentive problems that may shape analysts' behavior. A third section explains the model. Section four explains the empirical results. Finally, after some robustness checks, the last section includes the main conclusions of the paper.

2. Industry background

The importance of financial analysts for the capital markets has been recognized for long. Much of the trading activity that occurs is based on the recommendations from analysts and on the general expectations expressed in their reports. For this reason the government has increased its regulation of this market since dishonest reports and activities perfomed by analysts were discovered at the end of the 1990's. Understanding the environment under which analysts operate since the new regulations took place is essential in the study of their coverage decisions.

Analysts tended to "make excessive 'buy' recommendations and inflated earnings forecasts."[3] The reasons to do so varied from an increased ability to get privileged information, to the salary incentives and other conflicts of interest.[4] Hence, since the early 2000's the industry has been increasingly regulated.

Communication with firms is regulated by the SEC's regulation fair disclosure, also known as regulation FD. This regulation exists since 2000 and forbids disclosure of select information to any investor(s). All announcements and releases must be public.

Analysts are also forbidden from sharing information about their reports before they are published or from misreporting information for personal gain. It was the violations of these rules by several investing firms during the late 1990's and early 2000's that gave rise to the Global Settlement of 2002. This is an agreement achieved in 2002 between US government regulators and 12 large (at the time) investing companies that prevents analysts from sharing information with brokers within an investment firm by requiring both departments (research and brokerage) to be separated both physically and with the so called Chinese walls. Budget allocation to both departments must also be independent.

In 2002 other set of rules also started regulating analysts' compensations (they cannot be tied to the performance of investment banking or the brokerage business) and analysts' personal trading activity. Nowadays analysts must present a series of exams that test them on their economic and finance knowledge as well as their understanding of the regulations. They must also maintain their registration through a submission of documents that should show there are no conflicts of interest in their activities.

According to Hovakimian and Saenyasiri (2009), both the Global Settlement and regulation FD reduced all analysts' biases. However, analysts may still have a tendency to be optimistic according to the literate on the topic. For example, Easterwood and Nutt (1999) show that analysts overreact to good news and underreact to bad news. The herding behavior discussed in the introduction is yet another reason why systematic errors in the predictions may still exist (the mean error of the predictions is not necessarily zero).

3. Research design

3.1. Sample and data

The data was collected from the IBES and Compustat datasets. IBES contains data on each analyst who studies firms. This dataset includes their predictions, are; what the actual values of a set of predictable variables such as revenues and share values, among other data. Compustat contains firm specific information. In all models the predictions used for the estimations were those for earnings per share for the next fiscal year.

The observations start in 2006 for the IBES data and 2005 for the Compustat data (one more year to generate a variable growth of sales and then lag it) and end in 2008. Using data from these years seemed appropriate since there were accounting measure changes in 2005. Before 2005 the decision making of analysts on which firms to cover and how to make predictions was greatly influenced by illegal practices and subsequent changes in regulations, as was explained in the background section.

The data from IBES includes 420 different estimators (firms that hire analysts), 5858 different analysts, 5974 different firms being analyzed and 18,022 different actual values being forecasted (targets) in different occasions, by different analysts. The firms being analyzed are all the U.S. firms in the dataset. Not all 18,022 targets could be matched with Compustat, some observations were dropped because the trading firm was sold and there was conflicting data for that year. In addition, targets studied by only one analyst who made only one estimation were also dropped.[5] Once these observations were erased, the time series information is used to generate the explanatory variables described in the following section; the estimation only uses the transformed data for 2008. The author considered that there was enough cross section data to get reliable results. The final data set has 2743 observations, for two of which the actual earnings per share were not available, and hence no error in the estimation could be calculated.[6]

3.2. Variable description and hypotheses

Analysts = Total number of analysts in the market who made forecasts about the earnings per share for a particular stock in 2008.

Change analysts = One-year change in the total number of analysts covering a particular stock.

Estimators = An estimator is a firm that hires analysts to do research. This variable refers to the number of estimators who made forecasts about the earnings per share for a particular stock in 2008.

Change estimators = One-year change in the number or estimators covering a firm.

[2] Croci, Petmezas, and Vagenas-Nanos (2010) show that overconfidence can generate market losses. Their paper focuses on managers and shows that during acquisitions, firms with non-overconfident managers are consistently better of than those with overconfident ones.

[3] Hovakimian and Saenyasiri (2009) Pg. 1.

[4] See Hovakimian and Saenyasiri (2009) for detailed information on the incentive problems.

[5] Estimating the variable "revisions" makes little sense when there is only one prediction. See definition in the "Variable description and hypotheses" section.

[6] The definition of these variables is the following section.