# Why do Analysts Issue Long-term Earnings Growth Forecasts?

# An Empirical Analysis

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## ABSTRACT

We examine analysts' motives to issue long-term earning growth (LTG) forecasts. We find that analysts are more likely to issue LTG forecasts when their incentive to please managers is strong. In addition, analysts are more likely to choose firms that they are more optimistic about for LTG coverage. We find mixed evidence regarding whether analysts issue LTG forecasts to signal their ability or to meet investors' informational needs. Augmenting Ljungqvist et al (2006), we show that LTG forecasts are issued less likely to please managers, but more likely to meet investors' information needs in the presence of high institutional ownership.

## 1. Introduction

While the extant literature (e.g., Chan, Karceski and Lakonishok (2003)) yields overwhelming evidence on the over-optimism and inaccuracy of long-term earnings growth (LTG) forecasts, it remains silent on why analysts issue these forecasts, a question that becomes even more intriguing given the more voluntary nature of LTG forecasts compared with their near-term counterparts. That is, why do some analysts issue for some companies LTG forecasts, which are often deemed as extremely inaccurate and overly optimistic, when they can choose not to? This study offers insights into this question by empirically examining four non-exclusive hypotheses: analysts issue LTG forecasts to signal their ability, to reveal their optimism, to please the management (since these forecasts are overly optimistic), and to satisfy investors' informational needs.

With one-year-ahead annual earnings forecasts as the benchmark sample, we test our hypotheses jointly in a fixed-effect framework with analyst-year (or analyst) effect fixed to ensure that our results are not driven by unobserved analyst-level heterogeneity such as analyst peculiarities.

We document evidence for the manager pleasing and optimism revealing hypothesis, but mixed results for the analyst ability signaling and investor informational needs satisfying motives. Augmenting Ljungqvist et al (2006)'s finding about institutional investors' moderating role in analyst research, we find that analysts are less (more) likely to issue long-term forecasts for companies with large institutional ownership to please managers (to meet investors' information needs).

Our paper contributes to the literature in several ways. First, our results suggest that LTG forecasts may serve as a manipulative tool for analysts to please managers. Therefore, conflicts of interest may affect not only the quality of analyst research, such as the biases of analyst recommendations as examined by previous literature, but also the type of information included in the analyst reports. This motive may partly explain the documented over-optimism in LTG forecasts.

An examination of the providence of LTG forecasts offers several advantages in the investigation of interest conflicts. For example, due to reputation concerns, analysts are less likely to bias their near-term forecasts or recommendations. However, with accuracy, and thus reputation loss, not a primary concern, the voluntarily provided LTG forecasts provide a cleaner setting to study motives related to conflict of interest. Furthermore, the quality of analyst earnings forecasts and recommendations may depend not only on analyst incentives but also on analyst ability and even factors beyond analysts' control. For example, less able or less fortunate analysts may appear to issue biased recommendation in absence of incentives to please managers. The decision to provide LTG forecasts, however, is not affected by so many complicating influences. Instead, it is totally in analysts' control and involves little analyst ability.

Furthermore, our results augment Ljungqvist et al (2006)'s finding about the role of institutional investors in analyst research. We find evidence that higher institutional ownership reduces the likelihood of analysts issuing LTG forecasts to please mangers. Furthermore, we show that the presence of higher institutional ownership makes analysts

more responsive to investors' information needs.

The remainder of the paper proceeds as follows. Section 2 develops hypotheses. Section 3 discusses our data, sample, variables, and summary statistics. Section 4 presents the main results. Section 5 examines the role of institutional investors in analysts' motives of LTG forecast issuance. Section 6 concludes.

## 2. Hypotheses development

### *2.1 Characteristics of LTG forecasts*

There is a growing body of literature on LTG forecasts. La Porta (1996) finds that investment strategies seeking to exploit errors in analysts' forecasts earn superior returns because expectations about future growth in earnings are too extreme. Dechow and Sloan (1997) also document that naive reliance on analysts' forecasts of future earnings growth can explain over half of the higher returns to contrarian investment strategies. Harris (1999) reports three characteristics of LTG forecasts: (1) they are extremely low in accuracy; (2) they are inferior to the forecasts of a naïve model in which earnings are assumed to follow a martingale, and (3) they are significantly over-optimistic, exceeding the actual growth rate by an average of seven percent per annum. Chan, Karceski and Lakonishok (2003) analyze historical long-term growth rates across a broad cross section of stocks and show that I/B/E/S growth forecasts are overly optimistic and add little predictive power.

In the setting of IPOs, prior literature suggests that conflict of interests plays an important role in the optimism of LTG forecasts. For example, Rajan and Servaes (1997) examine data on analyst following for a sample of initial public offerings completed between 1975 and 1987, and find that analysts are overoptimistic about the earnings potential and long-term growth prospects of recent IPOs. They further document that, in the long run, IPOs have better stock performance when analysts ascribe low growth potential rather than high growth potential. Lin and McNichols (1998) find that lead and co-underwriter analysts' growth forecasts and recommendations are significantly more favorable than those made by unaffiliated analysts, although their earnings forecasts are not generally greater. Purnanandam and Swaminathan (2004) also document that, ex post, the projected high growth of overvalued IPOs fails to materialize, while their profitability declines from pre-IPO levels. Their results suggest that IPO investors are deceived by optimistic growth forecasts and pay insufficient attention to profitability in valuing IPOs.

### *2.2 Why do analysts issue LTG forecasts?*

In this section, we develop four non-exclusive testable hypotheses about the supply of long-term forecasts, which are analyst ability signaling, optimism revealing, management pleasing, and investor information needs satisfying. We also discuss the role of analyst peculiarity in LTG forecast issuance.

**A) Analyst ability signaling**

At first sight, it may seem reasonable that the highly inaccurate and optimistic LTG forecasts are associated with low-quality analysts. However, while LTG forecasts are highly inaccurate and overly optimistic ex post, they may provide useful information to investors when they are published. The huge errors we observe ex post might just reflect the difficulty in projecting earnings growth far into the future.

Besides, analysts don't have to provide LTG forecasts. Since it is a challenging job to forecast the far future, only high-ability analysts are confident enough to issue LTG forecasts. Therefore, we argue that analysts are more likely to issue LTG forecasts when they are of higher ability, or at least, they perceive themselves as of higher ability.

H1: Analysts of higher ability are more likely to issue LTG forecasts.

**B) Analyst optimism revealing**

McNichols and O'Brien (1997) find evidence of self-selection bias in analyst coverage. Specifically, they show that analysts tend to add firms they view favorably and drop firms they view unfavorably. Along the same line of thinking, we argue that there is a self-selection bias in the providing of LTG forecasts as well. After all, analysts should have stronger incentives to collect long-term company-specific information when they are confident in the company's future.

The documented optimistic nature of LTG forecasts also appears to suggest that analysts who are more optimistic about the company are more likely to issue long-term forecasts. Thus, we expect analysts to be more likely to issue LTG forecasts when they

are more optimistic about the company's future.

H2: Analysts are more likely to issue LTG forecasts for companies they are more optimistic about.

**C) Management Pleasing**

In practice, sell-side analysts often find themselves serving two masters. On the one hand, they serve investors, and thus aim at providing accurate and reliable research. On the other hand, their incentives to please the managers often obscure their goal of "objectivity", making the company they cover their other master. At the very least, analysts are often afraid to offend managers by providing unfavorable opinions partially because managers may withhold information from those analysts they are unhappy with (e.g., Lim (2001)).

In addition to informational concerns, analysts face an even higher stake when the company they cover is also an investment banking customer of the investment bank the analysts are affiliated with. There is a growing body of literature examining the role interest conflict plays in various aspects of analyst research. Dugar and Nathan (1995) show that analysts whose employers have an investment banking relationship with a company issue more favorable recommendations. Lin and McNichols (1998) find that lead and co-underwriter analysts' growth forecasts and recommendations are significantly more favorable than those made by unaffiliated analysts, although their earnings forecasts are not generally greater. Michaely and Womack (1999) document that stocks that underwriter analysts recommend perform more poorly than 'buy' recommendations by

unaffiliated brokers prior to, at the time of, and subsequent to the recommendation date, and further show that the market does not recognize the full extent of this bias. Agrawal and Chen (2005a) find that potential investment banking relationship has no effect on quarterly earnings forecasts, but is positively associated with more optimistic long-term growth forecasts. Agrawal and Chen (2005b) show that analyst recommendation levels are positively associated with the magnitude of conflicts they face, but investors recognize analysts' conflicts and properly discount analysts' opinions. O'Brien, McNichols and Lin (2005) find that affiliated analysts are slower to downgrade from the "Buy" and "Hold" recommendations and significantly faster to upgrade from the "Hold" recommendations. James and Karceski (2006) document that underwriter-affiliated analysts provide protection in the form of "booster shots" of stronger coverage if the IPO firm experiences poor aftermarket stock performance. Ljungqvist et al (2006) confirm the positive relation between investment banking and brokerage pressure and analyst recommendations, and further show that both bank reputation and institutional investors serve as moderating forces that temper analyst optimism.

Regarding LTG forecasts, prior literature also finds substantial evidence that investment banking relationship contributes to the extreme optimism in long-term earnings growth forecasts (e.g., Rajan and Servaes (1997) and Purnanandam and Swaminathan (2004)). Agrawal and Chen (2005a) suggest that analysts do not respond to conflicts by biasing short-term (quarterly EPS) forecasts, but appear to succumb to conflicts when making LTG forecasts. After all, in the case of LTG forecasts, which are

often neglected by investors who put heavy weight on analyst near-term forecasts and recommendations, there is only one master left: the company they cover. Furthermore, given that LTG forecast are relatively difficult to verify ex post, the reputation loss associated with an inaccurate LTG forecast is minimal.

One may argue that analysts should be indifferent to LTG forecast issuance because these forecasts are generally ignored by investors and thus do not benefit managers at the cost of investors. However, conflict of interest, although behavior-altering, does not necessarily affect the interest of the third party. Instead, it is rational for analysts to respond to conflict of interest in a way less harmful to investors. The voting behavior of mutual fund managers documented by Davis and Kim (2006) may lend support to this view. Specifically, Davis and Kim (2006) find that mutual fund managers appear to side with management especially when there is no clear evidence that the measure being voted on have an impact on shareholder wealth. Therefore, we argue that, due to the general ignorance by investors, LTG forecasts may be subject to analyst manipulation to please the companies they cover.

H3: The supply of (optimistic) LTG forecasts is positively related to analysts' incentive to please managers.

**D) Investor Information Need Satisfying**

Defond and Hung (2003) document that financial analysts respond to market-based incentives to provide investors with value-relevant information. In particular, they find that analysts tend to forecast cash flows for firms whose accounting, operating and

financing characteristics suggest that cash flows are useful in interpreting earnings and assessing firm viability. Along the same line, we expect that analysts provide LTG forecasts for firms whose long-term prospects are especially important for the valuation of their stocks. Therefore, we expect companies with large growth options to be more likely to receive LTG forecasts.

H4.1: Companies with larger growth options are more likely to receive LTG forecasts.

Meanwhile, Ljungqvist et al (2006) suggest that institutional investors serve as the ultimate arbiters of an analyst's reputation. Furthermore, institutional investors tend to be sophisticated users of the information analysts provide, who are therefore more likely to demand long-term information in their decision process. Consequently, analysts should be more likely to supply detailed research including a firm's long-term prospects when they know that the report is more likely to be read by institutional investors. Therefore, we expect companies with higher institutional investor ownership to be more likely to receive LTG forecasts.

H4.2: Companies with higher institutional investor ownership are more likely to receive LTG forecasts.

**E) Analyst peculiarity**

In addition to the four hypotheses we develop above, it is possible that the issuance of LTG forecasts depends on the peculiarities of analysts, such as their working habits and tastes. If this is true, we should find no systematic pattern in the issuance of LTG

forecasts. In addition, we should find little variation in the issuance decision of a particular analyst covering several companies.

### *2.3 Institutional investors' role in analysts' motives to issue LTG forecasts*

Ljungqvist et al (2006) document the role of institutional investors in moderating conflicts of interest in analyst research. They argue that driven by their career concerns, analysts are less likely to succumb to investment banking pressure in stocks that are highly visible to their institutional investor constituency.

In addition, underlying our hypotheses, we assume that long-term forecasts can be manipulated because the little attention they receive from investors. However, unlike individual investors, who may be more focused on analyst recommendations and near-term earnings forecasts while totally neglecting long-term forecasts, institutional investors read analyst reports thoroughly and put more weights on the contents instead. Consistently, Mikhail, Walther, and Willis (2006) find evidence that large investors are more sophisticated processors of information, while small investors are more easily misled by analyst research. Therefore, we expect analysts less likely to issue LTG forecasts to please managers for companies heavily owned by institutional investors. For the same reason, we also expect the presence of institutional investors to enhance analysts' incentives to issue LTG forecasts when long-term information is valuable to investors.

Overall, we hypothesize that the presence of institutional investors is negatively

(positively) relate to analysts' manager-pleasing (investor information needs satisfying) motives to issue LTG forecasts.

H5: Analysts are less (more) likely to issue LTG forecasts to companies with large institutional ownership to please managers (to meet investors' information needs).

## 3. Data, sample, variables, and summary statistics

### *3.1 Data and sample*

As in Defond and Hung (2003), we collect one-year-ahead annual earnings forecasts (FY1) as our benchmark sample to control for other factors that affect the availability of LTG forecasts.[1] We collect the one-year-ahead annual earnings forecasts in the I/B/E/S detail history file from year 1991 to 2003. We identify each analyst-firm-(forecast) year combination[2] and check whether there is any LTG forecast associated with these analyst-firm-year combinations. LTG forecasts are the long-term earnings growth forecasts as collected by I/B/E/S, which usually covers a five-year period that begins on the first day of the current fiscal year.

Panel A of Table 1 reports the number and proportion of firm-analyst pairs, analysts,

[1] The LTG forecasts, as collected by I/B/E/S, usually cover a five-year period that begins on the first day of the current fiscal year.

[2] Instead of using the year for which a forecast is made, we use the year during which a forecast is made. For example, the time stamp for a one-year-ahead forecast that is made in 2000 but for the Dec. 2001 fiscal quarter will be 2000 instead of 2001. We do so because we expect the decision to supply the forecasts are more economically related to the factors prevalent during the time the estimations are made

and firms associated with LTG forecasts by year. We observe significant variations in the size of the benchmark sample over the sample period. However, the proportions of analyst-firm associated with LTG forecasts demonstrate only small variations over years except for year 2003, which is associated with the lowest proportion of LTG forecast coverage. Specifically, the proportion of firm-analyst pairs that are associated with LTG forecasts is in the 42-47 percent range over period 1991-2002. Analysts who issue LTG forecasts account for around 58 percent of all the analysts who issue one-year-ahead earnings forecasts each year. The number of firms receiving analyst one-year-ahead forecasts peaked in 1996 with 1,149 firms covered, but dropped dramatically thereafter. In 2003, only 280 firms receive one-year-ahead forecasts from any analysts. The proportion of firms receiving LTG forecasts also seems to decrease over time.

### *3.2 Variables*

**(a) LTG Issuance**

LTG is a dummy variable that equals one if the observation is associated with long-term earnings growth forecasts (LTG) as reported in I/B/E/S, and zero otherwise.

**(b) Analyst Ability**

We adopt three sets of analyst ability measures. The first is analyst experience, which is adopted by many prior studies as proxies for analyst ability and skill. For example, Clement (1999) finds that forecast accuracy is positively associated with analysts' experience. Mikhail, Walther and Willis (2003) find that analysts underreact to

prior earnings information less as their experience increases, suggesting one reason why analysts become more accurate with experience. Following prior literature, we introduce two experience measures. The general experience of the analysts (Exp1) is defined as the number of years the analysts have issued earnings forecasts of any type for any company since 1983, when the sample period of I/B/E/S starts. Analysts' firm-specific experience (Exp2) equals the number of years the analysts have issued earnings forecasts of any type for the company since 1983.

Second, we use the accuracy of the analyst's previous near-term forecasts as a proxy for analyst ability. Prior studies generally suggest persistence in analysts' stock picking and earnings forecasting ability. For example, Sinha, Brown and Das (1997) document persistence in earnings forecast accuracy, that is, superior earnings forecasters in one period tends to be superior the next period. Mikhail, Walther and Willis (2004) find that analysts whose recommendation revisions earned the most (least) excess returns in the past continue to outperform (underperform) in the future. Therefore, we adopt the accuracy of the analysts' past near term earnings forecasts for the same company to proxy for analyst quality. We define net forecast error (NFE) as 100 times the absolute value of the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. Past_NFE equals $NFE_{t-1}$, that is, the net forecast error of the most recent near-term

earnings forecasts made during the previous year.[3] We expect a positive (negative) relation between the experience variables (Past_NFE) with the likelihood of long-term forecast issuance.

Finally, analysts affiliated with prestigious brokers tend to be of higher quality, as suggested by prior studies (e.g., Clement (1999)). We use the analysts' brokerage house affiliation as the other proxy for analyst ability. We collect the broker names that appear as top 15 in "the leader list" of the Institutional Investor magazine (II) from year 1990 to year 2002. If a broker appears as top 15 on "the leader list" of Institutional Investor in year t, the broker is defined as high status broker for year t+1. The dummy variable *Top15* takes on value one for analysts affiliated with the high status brokers and zero otherwise.

**(c) Analyst Optimism**

We adopt the optimism in analysts' near-term forecasts to measure analyst optimism about the company. Given the management's incentive to manage market expectations and to beat analyst forecasts, analysts who are optimistic to please managers should be forced to restrict or even discontinue their optimism in near-term forecasts, and therefore, we argue that the optimism in near-term forecasts should mostly capture the analysts' genuine optimism. Specifically, we use the forecast bias the analysts reveal in their past near-term forecasts to measure the analysts' optimism towards the company. Forecast Bias (FB) is 100 times the difference between the actual earnings and the analyst

[3] When we use the average NFE over the three-year period prior to the year under consideration as an alternative measure, the sample size is reduced, but the main results remain largely unchanged .

forecasts divided by the company's stock price at the end of the previous fiscal year. A negative (positive) FB indicates that the forecast overestimate (underestimate) the actual earnings, and that it is optimistic (pessimistic). We define $FB_{t-1}$ as the past near-term forecast accuracy (Past_FB).[4] We expect the estimated coefficient to be negative. That is, increased analyst optimism, as measured by a more negative value of forecast bias, is associated with higher likelihood of long-term forecast issuance.

**(d) Management Pleasing Incentives**

We adopt the existence of equity underwriting relationship as a proxy for analysts' incentive to please the managers, and hypothesize that analysts are more likely to issue long-term forecasts for firms who are also their investment banking customers.

We extract all the new common stock issues in the U.S. market from 1989 to 2004 from the Securities Data Company (SDC) new issues database. We hand match the underwriters in the SDC database with the brokers in the I/B/E/S database. To enhance the quality of our match, we obtain the starting and ending dates of the appearance of the underwriter in the SDC database, and compare them with the starting and ending dates of the appearance of the broker in the IBES database. We also check the merger and acquisition history of the investment banks from the investment bank's website as well as by Google searching.[5] We are able to get a one-to-one match for most of the SDC

[4] When we use the average FB over the three-year period prior to the year under consideration as an alternative measure, the sample size is reduced, but the main results remain largely unchanged

[5] We also double check the matching with the investment bank M&A and name changes data complied by Cheolwoo Lee, who generously provides us with the data.

underwriters. For underwriters/brokers that have experienced mergers or acquisitions, we assume that the surviving investment banks/brokers inherit the investment banking business and research coverage from both the acquirer and the target to assure continuity if the target broker coverage stops at the year of the merger.

We assume that there is an investment banking relationship between the broker and the firm from one year before the issuing of the new common stock to one year after. We define IB as a dummy variable that equals one if the analyst is affiliated with the investment bank that serves as a book runner for the company's new common stock issues, and zero otherwise. Considering that it is possible for analysts to issue LTG forecasts for IPO firms because investors are in greater needs for long-term information of these companies, we introduce an IPO dummy. Specifically, IPO equals one for company i in year t if the company has an initial public offering as indicated by the IPO flag in SDC for year t and t-1, and zero otherwise.

**(e) Firm Growth Options**

We adopt a firm's capital expenditure and R&D expenditure to measure the firm's growth options. Specifically, *GrowthExp* equals the sum of the company's R&D (Compustat item 46) expenditure and capital expenditure (Compustat item 30) scaled by the company's total assets (Compustat annual item 6) of the most recent fiscal year. That is, *GrowthExp* measures how much the company invests for the future. We expect *GrowthExp* to be positively associated with the issuance of LTG forecasts.

We also include three control variables relating to a company's growth options.

Hitech is a dummy variable that equals one for firms with Compustat SIC code 3570-3577 (computer hardware), or 7371-7379 (computer software), or 2833-2836 (pharmaceutical), and zero otherwise. B/M is the ratio of the company's book value to market value at the end of the most recent fiscal year. We obtain a company's book value (Compustat item 60) and market value (Compustat annual item 199*25) from the Compustat database. Log(size) is the natural log of market value of equity (Compustat annual item 199*25) in millions of dollars for the most recent fiscal year.

**(f) Institutional Ownership**

We collect the institution ownership information from the Thomson Financial Ownership database. *Institution* equals the total number of shares held by institutions who report their equity ownership in the quarterly 13f filings to the SEC divided by the total number of shares outstanding at the end of the previous calendar year. For firms with the institutional investor holdings data missing, we assume that these firms are 100% individually-owned and set *Institution* to zero.[6]

### *3.3 Summary statistics*

To be included in our sample, an observation needs to have all the above-mentioned variables available. We also delete 2,417 observations with negative book value and 69 observations with institutional holdings available but number of shares outstanding missing. Our final sample includes 170,139 one-year-ahead analyst-firm-year

[6] Ljungqvist et al (2005) suggest that it is possible that these companies are randomly missing. As a robustness check, we delete observations with missing institutional ownership and our results are similar.

combinations.

Table 2 presents summary statistics. For the combined sample, 30.7 percent of the firm-analyst-year combinations are associated with LTG forecasts. On average, the analysts have issued forecasts for any company for approximately seven and a half years, and issued forecasts for a particular company for more than four years. 35.2 percent of the sample is associated with analysts hired by brokers who appear as top 15 in "the leader list" of the Institutional Investor magazine (II) from year 1990 to year 2002. The net forecast error of the most recent one-year-ahead forecasts the previous year is 67 cents for a stock priced at 100 dollars. The mean past forecast bias is negative, indicating that the forecasts are optimistic, but the median is positive. On average, R&D and capital expenditures account for 10.1 percent of total assets. 13.8 percent of sample is associated with high technology companies. The mean percentage of institutional ownership is 52.6 percent.

## 4. Why do analysts issue LTG forecasts?

### *4.1 Univariate tests*

We first conduct a series of univariate tests and report our results in Table 3. We find that high-status broker affiliated analysts with more experience who issue more accurate near-term forecasts in the past for the company are more likely to issue LTG forecasts. We also find that analysts who are less optimistic about the company are more

likely to issue LTG forecasts. In addition, *IB* is significantly higher for the group with LTG forecasts. Firms with more growth options (only median) and more stocks held by institutional investors are more likely to receive LTG forecasts.

Overall, our univariate results largely support the analyst ability signaling, management pleasing, and investor informational need satisfying hypotheses, but contradict the analyst optimism revealing hypothesis.

### *4.2 Multivariate tests*

We expect LTG issuance decisions to be partly driven by analyst peculiarities such as their working habits or tastes, and thus focus on the controlling of analyst-level heterogeneities. We estimate a fixed-effect model with analyst-year effect fixed.[7] That is, we focus on analysts' decision to issue long-term forecasts among all the companies they cover in a given year. As a robustness check, we re-estimate a fixed-effect and a random effect model with only analyst effect, which allow us to include independent variables that are within analyst-year groups such as Exp1 and Top15. To account for yearly variations, we also include year dummies.

In column 1 of Table 4, we report the estimation results with analyst-year effect fixed. 16,197 analyst-year pairs (80,224 observations) are dropped due to all positive or all negative outcomes, but still 11,300 analyst-year pairs (89,915 observations) remain,

[7] We also estimate a random-effect model including analyst effect as in Ljungqvist et al (2006). The results are similar.

indicating that a given analyst may issue LTG forecasts for only a subset of companies she covers in a given year. Therefore, the issuance decision of LTG forecasts goes beyond analyst peculiarity.

Although LTG forecasts are documented as extremely inaccurate and overly optimistic, analysts are more likely to choose the companies they had more accurate past near-term forecasts for LTG coverage. However, analysts are less likely to issue LTG forecasts as they gain more firm-specific experience for the company. This result may be driven by analyst picking firms newly added to coverage for LTG forecasts.

We also find the estimated coefficient of Past_FB to be significantly negative, indicating that analysts may be more likely to issue LTG forecasts for companies they are more optimistic about.

We document strong support for the manager pleasing hypothesis. Investment banking tie (IB) is significantly positive at the one percent level. The evidence regarding the investor informational need satisfying hypothesis is, however, mixed. Analysts are more likely to pick companies with higher institutional ownership. However, companies with larger growth expenditures are less likely chosen for LTG coverage after controlling for other firm characteristics such as size and B/M.

In Column 2 and 3, we report the estimation results from a fixed-effect model with analyst effect fixed, and a random effect model including analyst effect. For both models, we include year dummies, but do not report the estimated coefficients to conserve space. Overall, the results are similar. We find support for the management pleasing and

optimism revealing motives, but mixed evidence regarding the analyst ability signaling and investor informational needs satisfying motives. For example, we find that analysts who have more general experience (only according to the random-effect model), who are able to issue more accurate near-term forecasts in the past, and who are affiliated with high status brokers are more likely to issue LTG forecasts, but again analysts seem to drop LTG coverage as they gain more firm-specific experience. Regarding the investor information needs satisfying hypothesis, we find that the coefficient of *Institution* is significantly positive as expected, but the coefficient of *Growth_Exp* is insignificant.

Taken together, we find evidence for the manger pleasing and analyst optimism revealing motives, but mixed evidence for investor informational needs satisfying and analyst ability signaling motives.

### *4.3 Bubble period evidence*

It is likely that analyst motives change depending upon market factors such as the competitiveness in the underwriting market and the power of institutional investors. Therefore, analysts may have extra incentives to please managers during the bubble period. However, providing optimistic LTG forecasts is an implicit form of pleasing, and analysts may go to the extreme of providing optimistic recommendations when they are under extra pressure in the late nineties. Therefore, it is eventually an empirical question whether analysts are more likely to provide LTG forecasts to please managers during the bubble period. We introduce the dummy variables, *Bubble*, and its interactive terms with

*IB*. Following Bradley, Jordan, and Ritter (2006), we define the bubble period as year 1999 and 2000. Table 5 contains our results. We find no evidence indicating that LTG forecasts are more motivated by the manager pleasing incentives during the bubble period.

**5. Institutional investors' role in analysts' motives to issue LTG forecasts**

We introduce two explanatory variables: the interactive term between *Institution* and *GrowthExp,* and the interactive term between *Institution* and *IB*. We expect the estimated coefficient of *Institution*GrowthExp* to be positive and the estimated coefficient of *Institution*IB* to be negative.

In Table 6, we find that companies with higher institutional ownership are less likely to be chosen for LTG forecast coverage because of investment banking ties. In addition, we show that institutional investors' role goes beyond that. The coefficient of the interactive term between institutional ownership and growth expenditure is significantly positive, indicating that analysts are more likely to issue LTG forecasts for companies with higher R&D and capital expenditures given the presence of higher institutional ownership.

To summarize, our results confirm the important role institutional investors play in analyst research. We find that institutional ownership is positively associated with LTG issuance for the right reason (investor informational needs satisfying), but negatively

associated with LTG issuance for the wrong reason (manager pleasing).

## 6. Conclusion

This paper examines analysts' motives to issue LTG forecasts. We develop four non-exclusive hypotheses, which are that analysts issue early forecasts to signal their ability, to reveal their optimism, to please the management (since these forecasts are overly optimistic), and to satisfy investors' informational needs. With one-year-ahead annual earnings forecasts as our benchmark sample, we test our hypotheses using a fixed-effect logit model with the analyst-year effect fixed, which ensures that our results are not driven by analyst peculiarities such as their working habits that equally affect analysts' decision to issue long-term forecasts for all the companies they cover.

We find support for the manager pleasing and analyst optimism revealing hypothesis, but mixed results for the ability signaling and investor informational needs satisfying motives. In addition, we examine institutional investors' role in determining analysts' motives to issue long-term forecasts. We find that analysts are less (more) likely to issue long-term forecasts to companies with large institutional ownership to please managers (to meet investors' information needs).

This paper contributes to the literature in several ways. First, an examination of the providence of long-term forecasts offers several advantages in investigating conflicts of interests, and we show that long-term forecasts may serve as a manipulative tool for

analysts to please managers. In addition, our results augment Ljungqvist et al (2006)'s finding about the role of institutional investors in analyst research.

## Table 1. The Distribution of Long-term Forecasts by Calendar Year

Panel A, B, and C present the distribution of analyst-firm pairs that are associated with LTG forecasts, analysts who issue LTG forecasts, and firms who receive LTG forecasts by calendar year, respectively. We collect the one-year-ahead annual earnings forecasts (FY1) in the I/B/E/S detail history file from year 1991 to 2003. We identify each analyst-firm-year combination and check whether there are long horizon earnings growth forecasts (LTG), as reported in I/B/E/S, associated with these analyst-firm-year combinations.

| | **Analyst-firm pairs** | | | **Analysts** | | | **Firms** | | |
|---|---|---|---|---|---|---|---|---|---|
| | FY1 | LTG | Proportion (%) | FY1 | LTG | Proportion (%) | FY1 | LTG | Proportion (%) |
| | (1) | (2) | (3)=(2)/(1) | (4) | (5) | (6)=(5)/(4) | (7) | (8) | (9)=(8)/(7) |
| 1991 | 7572 | 3278 | 43.29 | 350 | 189 | 54.00 | 480 | 393 | 81.88 |
| 1992 | 6940 | 3072 | 44.27 | 287 | 181 | 63.07 | 651 | 551 | 84.64 |
| 1993 | 10546 | 4394 | 41.67 | 431 | 250 | 58.00 | 663 | 535 | 80.69 |
| 1994 | 11366 | 4930 | 43.37 | 536 | 335 | 62.50 | 795 | 650 | 81.76 |
| 1995 | 13109 | 5498 | 41.94 | 600 | 364 | 60.67 | 928 | 684 | 73.71 |
| 1996 | 14567 | 6730 | 46.20 | 795 | 479 | 60.25 | 1163 | 867 | 74.55 |
| 1997 | 15312 | 7207 | 47.07 | 826 | 497 | 60.17 | 1057 | 705 | 66.70 |
| 1998 | 15482 | 6579 | 42.49 | 971 | 527 | 54.27 | 952 | 605 | 63.55 |
| 1999 | 15086 | 6686 | 44.32 | 947 | 531 | 56.07 | 692 | 500 | 72.25 |
| 2000 | 14985 | 6359 | 42.44 | 1081 | 648 | 59.94 | 686 | 471 | 68.66 |
| 2001 | 13274 | 6243 | 47.03 | 1132 | 684 | 60.42 | 280 | 206 | 73.57 |
| 2002 | 14331 | 6486 | 45.26 | 1575 | 926 | 58.79 | 329 | 220 | 66.87 |
| 2003 | 13285 | 4714 | 35.48 | 1758 | 879 | 50.00 | 391 | 166 | 42.46 |
| Mean | 12758 | 5552 | 43 | 868 | 499 | 58 | 697 | 504 | 72 |
| Median | 13285 | 6243 | 43 | 826 | 497 | 60 | 686 | 535 | 74 |

## Table 2. Summary Statistics

Table 2 reports the summary statistics of our sample, which includes 170,139 analyst-firm-year observations over the period 1991-2003. LTG is a dummy variable that equals one if the observation is associated with long-term earnings growth forecasts (LTG) as reported in I/B/E/S, and zero otherwise. The general experience of the analysts (Exp1) is defined as the number of years the analysts have issued earnings forecasts of any type for any company since 1983, when the sample period of I/B/E/S starts. Analysts' firm-specific experience (Exp2) equals the number of years the analysts have issued earnings forecasts of any type for the company since 1983. We define net forecast error (NFE) as 100 times the absolute value of the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. Past_NFE equals $NFE^{t-1}$, that is, the net forecast error of the most recent near-term earnings forecasts made during the previous year. Forecast Bias (FB) is 100 times the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. We define $FB^{t-1}$ as the past near-term forecast accuracy (Past_FB). We define IB as a dummy variable that equals one if the analyst is affiliated with the investment bank that serves as a book runner for the company's new common stock issues, and zero otherwise. IPO equals one for company i in year t if the company has an initial public offering as indicated by the IPO flag in SDC for year t and t-1, and zero otherwise. Hitech is a dummy variable that equals one for firms with Compustat SIC code 3570-3577 (computer hardware), or 7371-7379 (computer software), or 2833-2836 (pharmaceutical), and zero otherwise. B/M is the ratio of the company's book value to market value at the end of the most recent fiscal year. We obtain a company's book value (Compustat item 60) and market value (Compustat annual item 199*25) from the Compustat database. GrowthExp equals the sum of the company's R&D (Compustat item 46) expenditure and capital expenditure (Compustat item 30) scaled by the company's total assets (Compustat annual item 6) of the most recent fiscal year. Log(size) is the natural log of market value of equity (Compustat annual item 199*25) in millions of dollars of the most recent fiscal year. Institution equals the total number of shares held by institutions who report their equity ownership in quarterly 13f filings to the SEC divided by the total number of shares outstanding at the end of the previous year. For firms with the institutional investors data missing, we assume that these firms are 100% individually-owned and set Institution to zero.

Table 2 (Continue)

| Variable | Mean | Std. Dev. | 10% | 25% | Median | 75% | 90% |
|---|---|---|---|---|---|---|---|
| *LTG* | 0.307 | 0.461 | 0 | 0 | 0 | 1 | 1 |
| *Exp1* | 7.46 | 4.67 | 2 | 4 | 7 | 11 | 14 |
| *Exp2* | 4.06 | 3.29 | 1 | 2 | 3 | 5 | 9 |
| *Top15* | 0.352 | 0.475 | 0 | 0 | 0 | 1 | 1 |
| *Past_nfe* | 0.667 | 3.322 | 0.008 | 0.054 | 0.164 | 0.485 | 1.320 |
| *Past_fb* | -0.082 | 3.387 | -0.625 | -0.099 | 0.036 | 0.213 | 0.643 |
| *IB* | 0.009 | 0.097 | 0 | 0 | 0 | 0 | 0 |
| *IPO* | 0.001 | 0.027 | 0 | 0 | 0 | 0 | 0 |
| *GrowthExp* | 0.101 | 0.010 | 0 | 0.032 | 0.078 | 0.143 | 0.220 |
| *Hitech* | 0.138 | 0.345 | 0 | 0 | 0 | 0 | 1 |
| *Log(size)* | 7.407 | 1.831 | 5.033 | 6.127 | 7.383 | 8.645 | 9.794 |
| *B/M* | 22.996 | 2395.12 | 0.142 | 0.253 | 0.424 | 0.642 | 0.909 |
| *Institution* | 0.526 | 0.227 | 0.210 | 0.380 | 0.551 | 0.687 | 0.793 |
| Sample size | 170139 | | | | | | |

**Table 3. Why Do Analysts Issue LTG Forecasts? Univariate tests**

Table 3 presents the results from a series of univariate tests. We report the mean and median value for each subsample. Columns labeled as "Dif." contain the difference of mean (medain) between two subsamples. We report the t-statistics for means and an approximate z-statistic for a sum of ranks test under the hypothesis that the distributions are equal. LTG is a dummy variable that equals one if the observation is associated with long-term earnings growth forecasts (LTG) as reported in I/B/E/S, and zero otherwise. The general experience of the analysts (Exp1) is defined as the number of years the analysts have issued earnings forecasts of any type for any company since 1983, when the sample period of I/B/E/S starts. Analysts' firm-specific experience (Exp2) equals the number of years the analysts have issued earnings forecasts of any type for the company since 1983. We define net forecast error (NFE) as 100 times the absolute value of the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. Past_NFE equals $NFE^{t-1}$, that is, the net forecast error of the most recent near-term earnings forecasts made during the previous year. The dummy variable Top15 takes on value one for analysts affiliated with the high status brokers who appear as top 15 in "the leader list" of the Institutional Investor magazine (II), and zero otherwise Forecast Bias (FB) is 100 times the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. We define $FB^{t-1}$ as the past near-term forecast accuracy (Past_FB). IB is defined as a dummy variable that equals one if the analyst is affiliated with the investment bank that serves as a book runner for the company's new common stock issues, and zero otherwise. IPO equals one for company i in year t if the company has an initial public offering as indicated by the IPO flag in SDC for year t and t-1, and zero otherwise. Hitech is a dummy variable that equals one for firms with Compustat SIC code 3570-3577 (computer hardware), or 7371-7379 (computer software), or 2833-2836 (pharmaceutical), and zero otherwise. B/M is the ratio of the company's book value to market value at the end of the most recent fiscal year. We obtain a company's book value (Compustat item 60) and market value (Compustat annual item 199*25) from the Compustat database. GrowthExp equals the sum of the company's R&D (Compustat item 46) expenditure and capital expenditure (Compustat item 30) scaled by the company's total assets (Compustat annual item 6) of the most recent fiscal year. Log(size) is the natural log of market value of equity (Compustat annual item 199*25) in millions of dollars of the most recent fiscal year. Institution equals the total number of shares held by institutions who report their equity ownership in quarterly 13f filings to the SEC divided by the total number of shares outstanding at the end of the previous year. For firms with the institutional investors data missing, we assume that these firms are 100% individually-owned and set Institution to zero.

Table 3 (Continue)

| Variable | LTG=0 | | LTG=1 | | Dif | T | Dif | Z |
|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | | | | |
| | (1) | (2) | (3) | (4) | (1)-(3) | | (2)-(4) | |
| *LTG* | 0.000 | 0 | 1.000 | 1 | | | | |
| *Exp1* | 7.389 | 7 | 7.618 | 7 | -0.229 | -9.34 | 0 | -6.10 |
| *Exp2* | 4.048 | 3 | 4.088 | 3 | -0.04 | -2.34 | 0 | 1.05 |
| *Top15* | 0.328 | 0 | 0.406 | 0 | -0.078 | -31.55 | 0 | -31.46 |
| *Past_nfe* | 0.744 | 0.185 | 0.492 | 0.127 | 0.252 | 14.44 | 0.058 | 43.21 |
| *Past_fb* | -0.101 | 0.036 | -0.039 | 0.034 | -0.062 | -3.49 | 0.002 | -1.83 |
| *IB* | 0.008 | 0 | 0.012 | 0 | -0.004 | -8.05 | 0 | -8.05 |
| *IPO* | 0.001 | 0 | 0.001 | 0 | 0 | -0.64 | 0 | -0.64 |
| *GrowthExp* | 0.101 | 0.077 | 0.101 | 0.081 | 0 | 0.25 | -0.004 | -9.24 |
| *Hitech* | 0.130 | 0 | 0.157 | 0 | -0.027 | -15.17 | 0 | -15.16 |
| *Bm* | 22.168 | 0.443 | 24.863 | 0.382 | -2.695 | -0.21 | 0.061 | 39.41 |
| *Logsize* | 7.305 | 7.285 | 7.635 | 7.610 | -0.33 | -34.42 | -0.325 | -33.11 |
| *Institution* | 0.517 | 0.544 | 0.546 | 0.567 | -0.029 | -23.81 | -0.023 | -22.81 |
| Sample size | 117882 | | 52257 | | | | | |

**Table 4. Why Do Analysts Issue LTG Forecasts? Multivariate Tests**

Table 4 present our results with LTG as dependent variable estimated from the fixed-effect model with analyst-year effect fixed (Column 1), the fixed-effect model with analyst effect fixed including yearly dummies (Column 2), and the random effect model including analyst effect with yearly dummies (Column 3). We omit the estimated coefficients for the yearly dummies in Column 2 and 3. LTG is a dummy variable that equals one if the observation is associated with a long-term earnings growth forecast, and zero otherwise. The general experience of the analysts (Exp1) is defined as the number of years the analysts have issued earnings forecasts of any type for any company since 1983, when the sample period of I/B/E/S starts. Analysts' firm-specific experience (Exp2) equals the number of years the analysts have issued earnings forecasts of any type for the company since 1983. We define net forecast error (NFE) as 100 times the absolute value of the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. Past_NFE equals $NFE^{t-1}$, that is, the net forecast error of the most recent near-term earnings forecasts made during the previous year. The dummy variable Top15 takes on value one for analysts affiliated with the high status brokers who appear as top 15 in "the leader list" of the Institutional Investor magazine (II), and zero otherwise Forecast Bias (FB) is 100 times the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. We define $FB^{t-1}$ as the past near-term forecast accuracy (Past_FB). IB is defined as a dummy variable that equals one if the analyst is affiliated with the investment bank that serves as a book runner for the company's new common stock issues, and zero otherwise. IPO equals one for company i in year t if the company has an initial public offering as indicated by the IPO flag in SDC for year t and t-1, and zero otherwise. Hitech is a dummy variable that equals one for firms with Compustat SIC code 3570-3577 (computer hardware), or 7371-7379 (computer software), or 2833-2836 (pharmaceutical), and zero otherwise. B/M is the ratio of the company's book value to market value at the end of the most recent fiscal year. We obtain a company's book value (Compustat item 60) and market value (Compustat annual item 199*25) from the Compustat database. GrowthExp equals the sum of the company's R&D (Compustat item 46) expenditure and capital expenditure (Compustat item 30) scaled by the company's total assets (Compustat annual item 6) of the most recent fiscal year. Log(size) is the natural log of market value of equity (Compustat annual item 199*25) in millions of dollars of the most recent fiscal year. Institution equals the total number of shares held by institutions who report their equity ownership in quarterly 13f filings to the SEC divided by the total number of shares outstanding at the end of the previous year. For firms with the institutional investors data missing, we assume that these firms are 100% individually-owned and set Institution to zero. For each model, we report the estimated coefficient, the z statistics, the log-likelihood, and the sample size.

| | Predicted Sign | 1 | | 2 | | 3 | |
|---|---|---|---|---|---|---|---|
| | | Coef. | Z | Coef. | Z | Coef. | Z |
| *Exp1* | + | | | -0.059 | -1.44 | 0.005 | 1.95 |
| *Exp2* | + | -0.009 | -2.86 | -0.011 | -4.24 | -0.012 | -4.44 |
| *Top15* | + | | | 0.076 | 2.77 | 0.114 | 5.39 |
| *Past_nfe* | - | -0.024 | -4.83 | -0.022 | -5.48 | -0.028 | -6.88 |
| *Past_fb* | - | -0.008 | -1.65 | -0.012 | -3.14 | -0.014 | -3.62 |
| *IB* | + | 0.376 | 5.23 | 0.318 | 5.29 | 0.333 | 5.55 |
| *IPO* | + | -0.098 | -0.34 | 0.134 | 0.59 | 0.185 | 0.83 |
| *Hitech* | + | 0.053 | 1.48 | 0.053 | 1.82 | 0.158 | 6.12 |
| *GrowthExp* | + | -0.377 | -3.47 | -0.107 | -1.23 | -0.055 | -0.65 |
| *Bm* | - | 0.000 | 2.18 | 0.000 | 2.26 | 0.000 | 2.09 |
| *Logsize* | + | 0.136 | 23.82 | 0.104 | 22.95 | 0.096 | 22.13 |
| *Institution* | + | 0.276 | 6.86 | 0.217 | 6.66 | 0.281 | 8.88 |
| | | | | | | -2.160 | -41.56 |
| Model | | Analyst-year Fixed effect | | Analyst fixed effect (with year dummies) | | Analyst random effect (with year dummies) | |
| Log -likelihood | | -37060 | | -70519 | | -86610 | |
| # of obs. | | 89915 | | 140689 | | 170139 | |

**Table 5. Bubble Period Evidence**

We test whether managers have stronger incentive to issue LTG forecasts to please managers during the bubble period by adding a dummy variable Bubble, which equals one for year 1999 and 2000 and zero otherwise, and its interactive term with *IB*. LTG is a dummy variable that equals one if the observation is associated with a long-term earnings growth forecast, and zero otherwise. The general experience of the analysts (*Exp1*) is defined as the number of years the analysts have issued earnings forecasts of any type for any company since 1983, when the sample period of I/B/E/S starts. Analysts' firm-specific experience (*Exp2*) equals the number of years the analysts have issued earnings forecasts of any type for the company since 1983. We define net forecast error (NFE) as 100 times the absolute value of the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. *Past_NFE* equals NFE $^{t-1}$, that is, the net forecast error of the most recent near-term earnings forecasts made during the previous year. The dummy variable *Top15* takes on value one for analysts affiliated with the high status brokers who appear as top 15 in "the leader list" of the Institutional Investor magazine (II), and zero otherwise Forecast Bias (FB) is 100 times the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. We define FB $^{t-1}$ as the past near-term forecast accuracy (Past_FB). IB is defined as a dummy variable that equals one if the analyst is affiliated with the investment bank that serves as a book runner for the company's new common stock issues, and zero otherwise. IPO equals one for company i in year t if the company has an initial public offering as indicated by the IPO flag in SDC for year t and t-1, and zero otherwise. Hitech is a dummy variable that equals one for firms with Compustat SIC code 3570-3577 (computer hardware), or 7371-7379 (computer software), or 2833-2836 (pharmaceutical), and zero otherwise. B/M is the ratio of the company's book value to market value at the end of the most recent fiscal year. We obtain a company's book value (Compustat item 60) and market value (Compustat annual item 199*25) from the Compustat database. *GrowthExp* equals the sum of the company's R&D (Compustat item 46) expenditure and capital expenditure (Compustat item 30) scaled by the company's total assets (Compustat annual item 6) of the most recent fiscal year. Log(size) is the natural log of market value of equity (Compustat annual item 199*25) in millions of dollars of the most recent fiscal year. *Institution* equals the total number of shares held by institutions who report their equity ownership in quarterly 13f filings to the SEC divided by the total number of shares outstanding at the end of the previous year. For firms with the institutional investors data missing, we assume that these firms are 100% individually-owned and set Institution to zero. Bubble is a dummy variable that equals one for year 1999 and 2000, zero otherwise. For each model, we report the estimated coefficient, the z statistics, the log-likelihood, and the sample size.

| | | 1 | | 2 | | 3 | |
|---|---|---|---|---|---|---|---|
| | Predicted | Coef. | Z | Coef. | Z | Coef. | Z |

| | Sign | | | | | | |
|---|---|---|---|---|---|---|---|
| *Exp1* | + | | | -0.059 | -1.44 | 0.005 | 1.95 |
| *Exp2* | + | -0.009 | -2.86 | -0.011 | -4.23 | -0.012 | -4.44 |
| *Top15* | + | | | 0.076 | 2.76 | 0.114 | 5.38 |
| *Past_nfe* | - | -0.024 | -4.82 | -0.022 | -5.47 | -0.028 | -6.87 |
| *Past_fb* | - | -0.008 | -1.65 | -0.012 | -3.13 | -0.014 | -3.62 |
| *IB* | + | 0.402 | 5.13 | 0.351 | 5.37 | 0.360 | 5.52 |
| *IPO* | + | -0.099 | -0.35 | 0.133 | 0.59 | 0.185 | 0.83 |
| *Hitech* | + | 0.053 | 1.48 | 0.053 | 1.81 | 0.158 | 6.13 |
| *GrowthExp* | + | -0.377 | -3.48 | -0.107 | -1.22 | -0.054 | -0.64 |
| *Bm* | - | 0.000 | 2.18 | 0.000 | 2.26 | 0.000 | 2.09 |
| *Logsize* | + | 0.136 | 23.82 | 0.104 | 22.96 | 0.096 | 22.13 |
| *Institution* | + | 0.276 | 6.86 | 0.217 | 6.66 | 0.281 | 8.88 |
| *Bubble* | ? | | | -0.313 | -1.9 | -0.102 | -3.15 |
| *Bubble*IB* | + | -0.165 | -0.84 | -0.208 | -1.29 | -0.174 | -1.07 |
| Constant | | | | | | -2.160 | -41.56 |
| Model | | Analyst-year Fixed effect | | Analyst fixed effect (with year dummies) | | Analyst random effect (with year dummies) | |
| Log -likelihood | | -37059 | | -70523 | | -86616 | |
| # of obs. | | 89915 | | 140689 | | 170139 | |

**Table 6. The Role of Institutional Investors in Analysts' Motive to Issue Long-term Forecasts**

We test the effect of institutional investors on analyst motives. LTG is a dummy variable that equals one if the observation is associated with a long-term earnings growth forecast, and zero otherwise. The general experience of the analysts (*Exp1*) is defined as the number of years the analysts have issued earnings forecasts of any type for any company since 1983, when the sample period of I/B/E/S starts. Analysts' firm-specific experience (*Exp2*) equals the number of years the analysts have issued earnings forecasts of any type for the company since 1983. We define net forecast error (NFE) as 100 times the absolute value of the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. *Past_NFE* equals $NFE^{t-1}$, that is, the net forecast error of the most recent near-term earnings forecasts made during the previous year. The dummy variable *Top15* takes on value one for analysts affiliated with the high status brokers who appear as top 15 in "the leader list" of the Institutional Investor magazine (II), and zero otherwise Forecast Bias (FB) is 100 times the difference between the actual earnings and the analyst forecasts divided by the company's stock price the company's stock price at the end of the previous fiscal year. We define $FB^{t-1}$ as the past near-term forecast accuracy (Past_FB). IB is defined as a dummy variable that equals one if the analyst is affiliated with the investment bank that serves as a book runner for the company's new common stock issues, and zero otherwise. IPO equals one for company i in year t if the company has an initial public offering as indicated by the IPO flag in SDC for year t and t-1, and zero otherwise. Hitech is a dummy variable that equals one for firms with Compustat SIC code 3570-3577 (computer hardware), or 7371-7379 (computer software), or 2833-2836 (pharmaceutical), and zero otherwise. B/M is the ratio of the company's book value to market value at the end of the most recent fiscal year. We obtain a company's book value (Compustat item 60) and market value (Compustat annual item 199*25) from the Compustat database. *GrowthExp* equals the sum of the company's R&D (Compustat item 46) expenditure and capital expenditure (Compustat item 30) scaled by the company's total assets (Compustat annual item 6) of the most recent fiscal year. Log(size) is the natural log of market value of equity (Compustat annual item 199*25) in millions of dollars of the most recent fiscal year. *Institution* equals the total number of shares held by institutions who report their equity ownership in quarterly 13f filings to the SEC divided by the total number of shares outstanding at the end of the previous year. For firms with the institutional investors data missing, we assume that these firms are 100% individually-owned and set *Institution* to zero. For each model, we report the estimated coefficient, the z statistics, the log-likelihood, and the sample size.

| | Predicted | 1 | | 2 | | 3 | |
|---|---|---|---|---|---|---|---|
| | Sign | Coef. | Z | Coef. | Z | Coef. | Z |
| *Exp1* | + | | | -0.058 | -1.43 | 0.005 | 1.94 |
| *Exp2* | + | -0.009 | -2.86 | -0.011 | -4.25 | -0.012 | -4.45 |
| *Top15* | + | | | 0.076 | 2.77 | 0.114 | 5.3 |
| *Past_nfe* | - | -0.024 | -4.84 | -0.022 | -5.5 | -0.028 | -6.9 |
| *Past_fb* | - | -0.008 | -1.67 | -0.012 | -3.16 | -0.014 | -3.65 |
| *IB* | + | 0.702 | 4.14 | 0.664 | 4.77 | 0.711 | 5.12 |
| *IPO* | + | -0.072 | -0.25 | 0.151 | 0.67 | 0.202 | 0.9 |
| *Hitech* | + | 0.052 | 1.45 | 0.052 | 1.79 | 0.157 | 6.05 |
| *GrowthExp* | + | -0.914 | -4.41 | -0.473 | -2.83 | -0.335 | -2.08 |
| *Bm* | - | 0.000 | 2.19 | 0.000 | 2.28 | 0.000 | 2.11 |
| *Logsize* | + | 0.136 | 23.75 | 0.104 | 22.91 | 0.096 | 22.08 |
| *Institution* | + | 0.171 | 3.13 | 0.148 | 3.35 | 0.230 | 5.33 |
| *Institution*IB* | - | -0.633 | -2.11 | -0.688 | -2.74 | -0.757 | -3.01 |
| *Institution* GrowthExp* | + | 1.128 | 3.08 | 0.765 | 2.59 | 0.596 | 2.07 |
| *constant* | | | | | | -2.135 | -39.27 |
| Model | | Analyst-year Fixed effect | | Analyst fixed effect(with year dummies) | | Analyst random effect (with year dummies) | |
| Log-likelihood | | -37053 | | -70512 | | -86610 | |
| # of obs. | | 89915 | | 140689 | | 170139 | |

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