WHAT INFLUENCES ANALYSTS' FORECAST ACCURACY: THE FIRM'S ENVIRONMENT OR THE ANALYST'S CHARACTERISTICS

by

Haoyue Liu
Bachelor of Commerce, University of Manitoba, 2018

and

Yining Wang
Bachelor of Economics, Donghua University, 2018

PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN FINANCE

In the Master of Science in Finance Program
of the
Faculty
of
Business Administration

SIMON FRASER UNIVERSITY

Term Fall 2019

Approval

Name: **Haoyue Liu, Yining Wang**

Degree: **Master of Science in Finance**

Title of Project: **What influences analysts' forecast accuracy: the firm's environment or the analyst's characteristics**

Supervisory Committee:

_____

Amir Rubin
Senior Supervisor
Professor

_____

Alexander Vedrashko
Second Reader
Associate Professor

Date Approved: _____

Abstract

The objective of this paper is to quantify to what extent the absolute forecast error (hence, forecast error) of an analyst is dependent on the analysts' ability and to what extent it is dependent on the firm's environment. We analyze this question using the entire I/B/E/S file during the period from January 1992 to January 2019. Our results indicate that the magnitude of forecast errors is by far more determined by the firm's environment proxied by the firm's average forecast error in the past than analyst ability. Furthermore, all of the firm characteristics we control for are significant in explaining forecast errors. The firm size, annual return on equity, and the number of analysts have a negative correlation with forecast error, the financial leverage, and book-to-market ratio have a positive correlation with forecast error. For analyst characteristics, only the analyst's overall tenure is statistically significant and has a negative relation with forecast error.

Keywords: forecast error; firm characteristics; analyst characteristics

Acknowledgements

We want to thank Professor Rubin, who provided us with instruction on analyzing data, using the methodology as well as guiding us to improve academic writing. We want to thank Professor Vedrashko for supporting us and providing advice. We thank SFU Beedie faculty for the help throughout the MSc program.

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1. Introduction

Analysts occupy an important position in the functioning of the stock market since they have high expertise and they are important information providers to investors. However, the degree to which analysts improve information processing has not been systematically analyzed. In other words, we are not aware of work that tried to analyze the degree to which analysts improve the information over and above from what one may expect simply due to firm characteristics such as size, industry, and growth. Throughout the process of quantifying the relative importance of the firm environment versus analysts' characteristics, we also analyze which characteristics of companies and analysts are more likely to influence the forecast error.

Prior studies have largely relied on the analyst characteristics that influence the forecast accuracy. These analyst characteristics include analysts' personality, ability, and experience. Also, some of the literature analyze the forecast error based on analysts' past forecast accuracy.

More commonly, researchers discuss firm-specific characteristics that influence forecast error such as corporate governance disclosure and audit quality that should affect information uncertainty. Firms being in different industries also affects forecast accuracy. Firm characteristics that have been found to affect forecast accuracy include earnings variability, expenses on research and development, the market-to-book ratio, etc. (Kwon, 2002).

Interestingly, we are not aware of any past research that tried to quantify how much forecast accuracy is firm-related and how much is analyst-related. Thus, previous literature

studied the influence of analyst-specific characteristics and firm-specific characteristics on the forecast accuracy separately. Understanding the value of analysts to the information environment of the firm is of utmost importance. Therefore, our study fills this gap and quantifies the extent to which analyst characteristics and firm characteristics affect the forecast accuracy.

In the regression framework, we define the company's average forecast error from the previous year and analyst's average forecast error from the previous year as the key independent variables, and the current forecast error as the dependent variable. To maintain the robustness of our analysis, we use firm-characteristics and analyst-characteristics as control variables. Based on past literature, the firm control variables include firm size, the annual return on equity, financial leverage, book-to-market ratio, and the number of analysts following the specific firm in a single year. The analyst control variables include the overall tenure of analysts, the firm-specific tenure and the number of firms covered by a single analyst (Michaely et al., 2018). All the data are standardized so that we can measure the influence in the percentage of the firm versus analyst effects on forecast accuracy. We run the regression for these variables and include firm and analyst fixed effect in various analyses to get closer to a causal interpretation of our results.

The conclusion is that the firm characteristics have a stronger influence on the forecast error, while the analyst characteristics have limited influence on the forecast error. In specific, 16.63% of the variation is explained by company characteristics and only 4.31% of the variation is explained by analyst characteristics (in a firm and year fixed-effect analysis). Furthermore, all of the firm-characteristics are significant. Under the scenario that both year and analyst effect is fixed, the firm size and annual return on equity have a

negative coefficient, which makes sense since larger firms will be more stable and relatively easy to predict (Sparta, 2005). The financial leverage and book-to-market ratio have a positive coefficient with forecast errors, which is consistent with a previous analysis (Höbarth, 2006). For analyst-characteristics, analysts with longer overall tenure will have lower forecast errors. This is consistent with prior findings (e.g., Alford and Berger, 1999; Clement, 1999).

There are some limitations to the research. We include some variables for firms and analysts, but some other variables discussed in literature are omitted due to lack of data, such as the personalities (optimistic or pessimistic) of the analyst (Tamura, 2002), the internal environment of the brokerage house (Jacob, Lys and Neale, 1999), corporate governance disclosure, and audit quality that affect information uncertainty (Yu, 2010). Further analysis can be done based on these characteristics to make the project more comprehensive.

The rest of the paper is organized as follows: Section 2 provides the literature review and includes previous studies on analyst or firm characteristics influencing forecast error. In Section 3 we provide the description of data and the methodology used in the study, including regression, control method and test approach. Section 4 provides the explanations for the results. Finally, Section 5 provides conclusions.

2. Literature Review

2.1 Analyst Characteristics Influencing Forecast Error

The analyst's forecasting report has a great influence on investors' behavior. Analyst characteristics affecting the forecast accuracy has aroused the considerable interest of researchers and became a hot topic. There are typically two approaches to analyze the forecasting error on the basis of analyst characteristics. One way is to analyze different analyst characteristics regarding the forecasts of earnings. Another way is to rank analysts based on the accuracy of past earnings forecast. Past evidence suggests that the analyst characteristics model and past accuracy model perform equally in testing the analysts' forecast error (Brown, 2001). Our analysis uses analyst characteristics as control variables when analyzing the forecast error.

2.1.1 Analyst characteristics

Previous researchers focus on different characteristics of analyst that influence the forecast accuracy. The internal structure of the brokerage house and the analysts' competence are related to forecasting accuracy (Jacob, Lys, and Neale, 1999). Clement (1999) suggests a positive relation between analysts' experience and forecast error, while the number of firms and the industries followed by the specified analyst is negatively associated with forecast accuracy, which is consistent with our result. Analyst coverage and forecast accuracy are negatively correlated, and the degree of negative correlation influenced by researchers' personality (optimistic or pessimistic) and the relationship with mutual funds in investment banks and brokerage firms (Xu et al., 2013). Forecast accuracy is affected by non-financial information. The more information about the company internal

environment and the more forward-looking information analysts used lead to less forecast error (Orens and Lybaert, 2007).

Other studies categorize analysts in different groups based on their characteristics and provide unique perspectives on what influences to forecast accuracy. For example, Brown and Mohammad (2010) use predictive ability and stock price as measures of analysts' general capacity, and state that analysts with higher general capacity have less forecast error than those with only firm-specific abilities. Rubin et al. (2015) divide analysts' functions into two roles: discovery and interpretation. Analysts who forecast more accurately often modify their forecasts after unanticipated annual reports are released, which indicates that they have a stronger ability to interpret information. Tamura (2002) finds herding analysts have a stronger serial correlation than other analysts. Earnings forecasts of herding analysts are almost equal to the consensus and related to their personalities. Furthermore, Clement and Tse(2005) divide analysts' earnings forecasts into herding or bold. They state that when the analyst's prior forecast accuracy and experience increase, analysts are more likely to be bold. The probability of bold forecast decreases when the number of industries tracked by analysts increases. Compared to herding forecasts, bold forecasts are more precise. In other words, there is greater correlation between herding forecast revisions and forecast error.

All these results suggest that analysts' characteristics may help to analyze differences in forecast performance. Modeling these characteristics will improve the research on market expectations.

2.1.2 Past Accuracy of Analyst

Some works of literature focus on the past accuracy of the analyst. Michaely et al. (2018) divide analysts into high quality and low quality based on their past prediction accuracy and find out that high-quality analysts have less forecast error. Stickle et al. (1990) find that 38% of the variability of analyst forecast is explained by three variables, which are the average consensus forecast change of other analysts; the difference between the analysts' current forecast and consensus forecast; and cumulative stock return based on the analysts' current forecast (Stickel, 1990).

However, some researchers doubt whether past performance affects the forecast accuracy. Hall and Tacon (2010) challenge prior research and state analysts have a bias that stocks with positive price momentum and low book-to-market ratios will perform better in the future, so analysts are more likely to recommend these stocks. This indicates that the past forecast accuracy will not affect the current forecast error. Michael Mikhail, Walther, and Willis (2003) find that when the experience increase, analysts are less influenced by past forecast error, which can explain why experienced analysts provide a more accurate forecast.

2.2 Firm Characteristics Influencing Forecast Error

Firms in different industries, with different financial characteristics, also affect forecast accuracy. Kwon (2002) finds that low-tech firms have higher forecast error and forecast dispersion than high-tech firms. Specifically, the forecast error is positively correlated with changes in earnings, forecast dispersion, and expenses on research and

development. The forecast error has a negative correlation with the number of analysts and market-to-book value, consistent with low-tech firms compared to high-tech firms.

Alford and Berger (1999) state that forecast accuracy will be improved if more analysts are tracking the stock, which is consistent with our findings. Usually, stocks would attract more analysts if the commissions are high, which caused by increasingly trading volume.

Otherwise, researchers fully discuss the characteristics of information uncertainty that will affect the prediction error. Great analyst behavior deviation leads to greater information uncertainty. According to the previous findings of post-analysis revision drift, greater information uncertainty will lead to more positive forecast errors and subsequent prediction revisions after good news released(Zhang, 2006).

Several characteristics of the company can cause information uncertainty, such as corporate governance disclosure and audit quality. The more comprehensive governance information disclosed by the company in the annual reports, analysts are more likely to understand the influence of corporate governance. Therefore, these companies have more accurate and less dispersed forecasts, thus attracting more analysts to follow (Yu, 2010). Governance transparency and financial transparency are two different country-level characteristics. Bhat et al. (2006) find that there is a positive relationship between governance transparency and forecast accuracy under circumstances have the same financial transparency. Furthermore, when financial disclosure is not transparent, governance-related disclosure will have a greater impact on the information environment improvement.

In addition, another reason for information uncertainty is the low quality of financial statements (Lobo, Song and Stanford, 2012). High-quality reports provided by the big five auditors are related to better analyst forecast performance (Behn, Choi, and Kang, 2008).

3. Data and Methodology

3.1 Data

We collect data from January 1992 to January 2019, since we prefer to cover the data as much as possible, we use the earliest data appeared in I/B/E/S. We download annual earnings per share (EPS), earnings announcements, and analyst code in I/B/E/S and collect daily stock price and the number of shares outstanding with matched CUSIP from the Center for Research in Security Prices (CRSP) database. The data used to compute control variables includes net income, total assets, and total shareholder's common equity which are downloaded from the Compustat database. Table 1 presents the descriptive statistics of all variables used in our project.

3.1.1 Dependent and Explanatory Variables

In the regression, the dependent variable is forecast error which is defined as the difference between the analyst's estimated annual earnings per share and the actual earning in earnings announcements and divided by share price at the end of each calendar year. [1] Since the main purpose of our project is to identify which factors have more influences on forecast accuracy, we test for two main independent variables in our regression. The first independent variable is the company forecast error at the previous year which is the average forecast error of the company at year t-1 (across all of its analysts at year t-1). The second variable is the analyst forecast error which is the average forecast error of the analyst in all the companies that he/she followed at year t-1 based. We also have a third independent variable which is optional, the forecast error of analyst in the same company at t-1 (according to the results of regression, this variable is not significant, so it has been treated

[1] Forecast error is used for short, all forecast errors are actually forecast error.

as an optional variable). Initially, we have 217,633 observations, once we merge forecast error and stock price, and drop the missing forecast error, we ultimately have 34,955 observations.

3.1.2 Control Variables

When we are running a regression with firm variables, we use the following firm characteristics as control variables: firm size, the annual return on equity, financial leverage, book-to-market ratio, and the number of analysts. Firm size is defined as the log of the firm's number of shares outstanding at the end of the year multiplied by the share price. Annual return on equity is calculated by using net income at the end of the fiscal year and divided by the average book value of equity for each firm. Financial leverage is defined as total assets divided by total common equity. The book-to-market ratio is the book value of common equity, which is obtained by total shareholder's common equity on balance sheet, over the market value of common equity. The last control variable of firm characteristic is the number of analysts which is counted by the number of analysts following the specific firm in a single year.

There are also some control variables based on analyst characteristics. The first variable is the overall tenure of analyst which is the number of years that analysts have been recorded in the I/B/E/S file. The second variable is the firm-specific tenure which is the number of years that analysts who have covered the specific firm in the I/B/E/S file. The last control variable is the firm coverage which is defined as the total number of firms covered by a single analyst in a year.

3.2 Methodology

The main purpose of our project is to identify which factor has more influence on forecast accuracy, so we run the regression between forecast error and analyst forecast error at year t-1 and firm forecast error of at year t-1. Initially, we have the third independent variable which is the average forecast error of individual analysts who covered the same firm at year t-1. However, we find out that this variable is not significant, so we add it as an optional variable. In reality, the forecast error of an analyst for the same firm does not fluctuate a lot through years, thus the result accords with reality.

To better present the extent of influence between the two variables, we calculate a ratio that equals to company forecast error divided by analyst forecast error. In Figure 1, we present this average ratio across all firms in a given year during the period 1993 to 2018.

3.2.1 Forecast Error Regression

We normalize all the data that we use and run regression three times based on the following three equations:

$$FE_{i,k,t} = a + bFE_{k,t-1}$$

$$FE_{i,k,t} = a + bFE_{i,t-1}$$

$$FE_{i,k,t} = a + bFE_{k,t-1} + cFE_{i,t-1} + dFE_{i,k,t-1}$$

Where $FE_{i,k,t}$ represents the forecast error of the individual analyst i for the specific firm k at current year t. $FE_{k,t-1}$ represents the average forecast error of all analysts who covered the same firm k in the previous year t-1. $FE_{i,t-1}$ represents the average forecast error of all firms that an individual analyst i covered in the previous year t-1. $FE_{i,k,t-1}$ represents

the additional variable. The regression results are presented in Table 2. In this case, we can identify the relationship and significance between different variables.

3.2.2 Control for Firm- and Analyst- Characteristics

To further test the relationship between the forecast error and two independent variables, we run more regression using firm-characteristic control variables and analyst-characteristic control variables. The regression of analyst forecast error at t on the average forecast error of firms at t-1, controls for firm-characteristic variables with year fixed effect and firm fixed effect, is defined as follows:

$$FE_{i,k,t} = a + bFE_{k,t-1} + cSize_{k,t-1} + dROE_{k,t-1} + eLeverage_{k,t-1} + fBM_{k,t-1} + gAnalystNumber_{i,t-1} + \text{i.year} + \text{i.firm}$$

Where $Size_{k,t-1}$ is the specific firm size at year t-1, $ROE_{k,t-1}$ is the firm k's annual return on equity at year t-1, $Leverage_{k,t-1}$ is the firm's financial leverage at year t-1, $BM_{k,t-1}$ is the firm's book-to-market ratio at year t-1, and $AnalystNumber_{i,t-1}$ is the number of analysts who cover the same firm at year t-1, i.year and i.firm represent fixed-effect (indicators) for year and firm, respectively.

Then we run another regression between forecast error and average forecast error of analyst at t-1, and control for analyst-characteristic variables with year fixed effect and firm fixed effect, representing as the following equation:

$$FE_{i,k,t} = a + bFE_{i,t-1} + cOT_{i,t-1} + dFT_{i,t-1} + eCoverage_{i,t-1} + \text{i.year} + \text{i.firm}$$

Where $OT_{i,t-1}$ is the overall tenure of the individual analyst i at t-1, $FT_{i,t-1}$ is the tenure since the individual analyst has been covered the specific firm in I/B/E/S at t-1, and

$Coverage_{i,t-1}$ is the number of firms that an individual analyst covered at t-1. Next, we run the regression with all firm- and analyst- characteristic control variables. The results of the regression are shown in Table 3 Panel B.

Next, we repeat the previous regression, but running the regression with year fixed effect and analyst fixed effect. The integrated regression equation is defined as following:

$$FE_{i,k,t} = a + bFE_{k,t-1} + cFE_{i,t-1} + dSize_{k,t-1} + eROE_{k,t-1} + fLeverage_{k,t-1} + gBM_{k,t-1} + \mathrm{h}AnalystNumber_{i,t-1} + jOT_{i,t-1} + mFT_{i,t-1} + nCoverage_{i,t-1} + \mathrm{i.year} + \mathrm{i.analyst}$$

4. Results

Figure 1 has shown the ratio from 1993 to 2018, we can conclude that the firm's environment has more impact on forecast accuracy most of the time. In Table 2, the regression results in Column 1 and 2 provide how the forecast accuracy is affected by the firm's environment or analyst's characteristics, respectively. The results in Column 3 show the effect of forecast accuracy of both firm and analyst factors. Column 4 presents the result where we also include the optional variable (analyst forecast error for the specific firm at t-1). According to the results, the coefficients of both company and analyst forecast errors are significant under all scenarios. However, the coefficient of company forecast error is higher than analyst forecast error, which means the forecast accuracy will be affected more by company factors. In column 4, we can see that 16.63% of variation is explained by company factors and only 4.31% of variation is explained by analyst factors, the regressions are both statistically and economically significant.

In Table 3, we control for the firm- and analyst- characteristic for the following regression. In Panel A, we have regression results with year fixed effect. The independent variables in Column 1 and 2 are company forecast error and analyst forecast error respectively, and the control variables are firm-characteristic and analyst-characteristic respectively. Column 3 represents the results of the aggregate regression. Based on the results, we can also conclude that the firm's environment has more influence on forecast accuracy than analyst's characteristics do. Also, all of the firm-characteristics are significant; the firm size and annual return on equity have a negative coefficient, which means that larger firms and firms with higher annual returns on equity will have lower forecast errors. This makes sense since a large firm is relatively easier to predict. Also,

the number of analysts has a negative coefficient, which represents that a company with more analysts followed will have lower forecast errors. For analyst-characteristics, only overall tenure is statistically significant, which means an analyst with longer overall tenure or more experience will give lower forecast error.

In Panel B, we include both year and firm fixed effects and repeat the same regression in the previous table. With the firm fixed effect, the coefficient of company forecast error decreases and becomes negative. This makes sense in a firm fixed-effect regression because of a mean reversion effect. A company that had a high forecast error in the previous year will tend to revert to its overall average in a fixed-effect regression. Similar to Panel A, all of the firm-characteristics are statistically and economically significant. However, all of the analyst-characteristics are not significant, which means they have a limited impact on forecast accuracy. In Panel C, both year and analyst fixed effects are included.[2] The same conclusion can be drawn from these results. The company factors have much more impact on forecast accuracy than analyst factors do. Here the analyst accuracy effect becomes negative because analysts too revert to their overall mean. For control variables, larger firm size and a higher return on equity will result in lower forecast error, higher financial leverage and the higher book-to-market ratio will result in higher forecast error, a company with more analysts followed will have lower forecast error, and the rest variables have no impact on forecast accuracy.

[2] Since the result of overall tenure is omitted caused by collinearity, we removed the variable from the model.

5. Conclusion

Our project analyzed what extent forecast accuracy depends on the firm's environment and to what extent it depends on the analyst's abilities. To test the significance of two factors, we use the current forecast error as the dependent variable; and use the average company forecast error of all analysts in the previous year, and the average analyst forecast error across all companies in the previous year as explanatory variables. We also use some firm-characteristics and analyst-characteristics as additional control variables, to further investigate our study and confirm our conclusion.

Based on our research, we find that forecast accuracy is influenced four times more by the firm's environment than by the analyst's accuracy. We find that firm characteristics such as firm size, the annual return on equity, financial leverage, book-to-market ratio, and the number of analysts have a significant effect on forecast error. On the other hand, we can also conclude that the analyst's characteristics have a limited effect on forecast accuracy of earnings per share. Even the overall tenure of an analyst, which seems to be important for reduced forecast accuracy, becomes insignificant in a firm-fixed effect regression, implying that the longer-tenured individual tends to herd to certain firms that are associated with lower forecast error.

Figure 1 The ratio of the company forecast error and analyst forecast error

The ratio equals to company forecast error divided by analyst forecast error from 1993 to 2018.

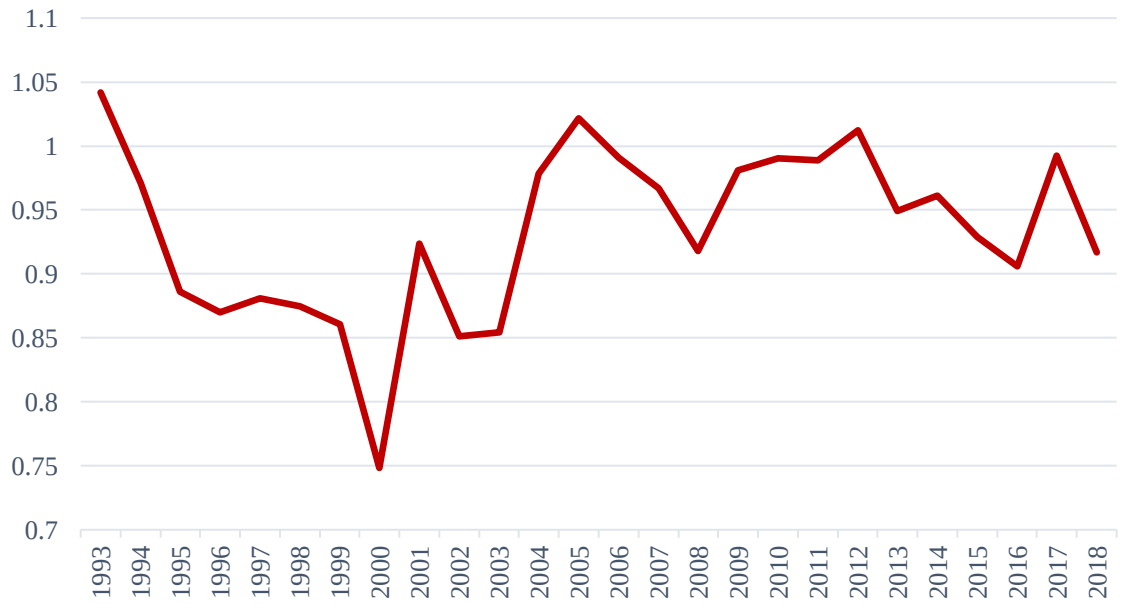

Table 1 Descriptive statistics

This table provide the descriptive statistics of the variables used in the paper. The forecast error is defined as the difference between the actual and closest estimate of annual earnings per share, divided by share price. Average company forecast error is the average forecast error of the company at year t-1 (across all of its analysts at year t-1). Average analyst forecast error is the average forecast error of the analyst in all the companies that he/she followed at year t-1 based. Firm size is the log of the stock price multiplied by the number of shares outstanding. Annual return on equity is the net income over the average book value of firm's common equity. Financial leverage is the total assets divided by total equity. Book-to-market is the book value of common equity over market value of common equity. Number of analysts is the number of analysts following the firm. Overall tenure is the number of years that analysts have been recorded in the I/B/E/S file. Firm-specific tenure is the number of years of the analysts who have been covered the specific firm in the I/B/E/S file. Firms covered is the number of firms covered by the analyst.

Variables	Observations	Mean	Std. Dev.	Min	Max
Forecast Error	102,308	0.0061	0.0161	-0.8	0.1792
Average company forecast error at t-1	34,955	0.0050	0.0121	-0.0312	0.1778
Average analyst forecast error at t-1	34,955	0.0053	0.0099	-0.0167	0.1787
Firm Size	102,178	14.9160	1.8621	8.0247	20.7764
Annual ROE	102,304	0.1151	3.2518	-31.055	37.6277
Financial Leverage	102,307	0.5577	0.2689	0	24.875
Book-to-Market	102,308	0.0012	0.0150	-0.5377	1.007
Number of Analysts	102,308	7.7349	7.6072	1	48
Overall Tenure	102,308	9.7657	6.3494	1	27
Firm-Specific Tenure	102,308	3.5114	3.6868	1	26
Firm Coverage	102,308	3.5604	2.6855	1	27

Table 2 What affects forecast error? Analyst or firm

The table provides regression results where the dependent variable is forecast error and the independent variables are forecast error of the company at t-1, forecast error of the analyst at t-1, and forecast error of the analyst in the same company at t-1. Both the dependent and independent variables are normalized. *, **, *** denote significant at the 10%, 5%, 1% respectively and t-statistic of the coefficient is provided in parenthesis.

	Forecast Error			
	(1)	(2)	(3)	(4)
Average company forecast error at t-1	0.2169*** (47.48)		0.1856*** (31.41)	0.1663*** (17.19)
Average analyst forecast error at t-1		0.1671*** (36.11)	0.0492*** (8.32)	0.0431 *** (6.75)
Analyst forecast error in this company at t-1				0.0311** (2.52)
Company/Analyst effect ratio			3.7724	3.8585
Adj R-squared	0.0606	0.0359	0.0624	0.0625

Table 3 Forecasting Performance

The table provides regression results to explore how forecast error varies depending on firm and analyst characteristics. The firm characteristics include firm size, annual return on equity, financial leverage, book-to-market, and number of analysts. The analyst characteristics include overall tenure, firm-specific tenure, and firm coverage. Panel A provides the forecasting performance with year fixed effect. Column (1) represents the regression for the forecast error with firm-characteristic control variables. Column (2) represents the regression for the forecast error with analyst-characteristic control variables. Column (3) represents the regression with both firm-characteristic and analyst-characteristic control variables. Panel B provides the forecasting performance with year and firm fixed effect. Panel C provides the forecasting performance with year and analyst fixed effect. T-statistics elsewhere are in parentheses. All variables are normalized, so the coefficients can be interpreted in standard deviation terms. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Panel A. Forecasting performance with year fixed effects

	Forecast Error		
	(1)	(2)	(3)
Average company forecast error at t-1	0.1524***	0.1802***	0.1526***
	(26.39)	(30.85)	(26.46)
Average analyst forecast error at t-1	0.0437***	0.0461***	0.0421***
	(7.60)	(7.88)	(7.33)
Firm Size	-0.1804***		-0.1975***
	(-35.80)		(-34.97)
Annual ROE	-0.6375***		-0.6525***
	(-5.17)		(-5.29)
Financial Leverage	0.0827***		0.0896***
	(15.45)		(16.58)
Book-to-Market	0.0169***		0.0159***
	(4.96)		(4.68)
Number of Analysts	-0.0377***		-0.0345***
	(-8.93)		(7.52)
Overall Tenure		-0.0120**	-0.0255***
		(-2.09)	(-4.53)
Firm-Specific Tenure		-0.0241***	-0.0033
		(-4.99)	(-0.70)
Firm Coverage		-0.0041	-0.0051
		(-0.96)	(-1.20)
Year fixed effects	YES	YES	YES
Company/Analyst effect ratio	3.487	3.909	3.625
Adj. R-squared	0.126	0.092	0.128

Panel B. Forecasting performance with year fixed effects and firm fixed effects

	forecast error		
	(1)	(2)	(3)
Average company forecast error at t-1	-0.0374** (-6.20)	-0.0148** (-2.39)	-0.0369** (-6.12)
Average analyst forecast error at t-1	0.0234** (4.25)	0.0258** (4.54)	0.0230** (4.19)
Firm Size	-0.6169** (-41.60)		-0.6237** (-41.65)
Annual ROE	-0.4612** (-3.58)		-0.4640** (-3.60)
Financial Leverage	0.0951** (8.81)		0.0968** (8.96)
Book-to-Market	0.0364** (4.22)		0.0362** (4.20)
Number of Analysts	-0.0259** (-4.03)		-0.0183** (2.90)
Overall Tenure		-0.0025 (-0.44)	-0.0074 (-1.35)
Firm-Specific Tenure		-0.0039 (-0.79)	-0.0033 (-0.70)
Firm Coverage		-0.0029 (-0.63)	0.0038 (0.87)
Year fixed effects	YES	YES	YES
Firm fixed effects	YES	YES	YES
Adj. R-squared	0.345	0.301	0.346

Panel C. Forecasting performance with year fixed effects and analyst fixed effects

	forecast error		
	(1)	(2)	(3)
Average company forecast error at t-1	0.1357** (22.80)	0.1681** (27.96)	0.1363** (22.91)
Average analyst forecast error at t-1	-0.0833** (-12.43)	-0.0891** (-13.01)	-0.0836** (-12.48)
Firm Size	-0.2238** (-33.69)		-0.2366** (-31.99)
Annual ROE	-0.5660** (-4.50)		-0.5694** (-4.52)
Financial Leverage	0.1112** (15.82)		0.1118** (15.91)
Book-to-Market	0.0131** (3.03)		0.0123** (2.85)
Number of Analysts	-0.0519** (-9.43)		-0.0259** (4.39)
Firm-Specific Tenure		-0.0291 (-5.23)	-0.0030 (-0.55)
Firm Coverage		-0.0045 (-0.63)	-0.0032 (-0.47)
Year fixed effects	YES	YES	YES
Analyst fixed effects	YES	YES	YES
Adj. R-squared	0.221	0.186	0.221

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