Analysts' reluctance to voice conservative opinions and the informational value of long-term earnings growth forecasts

Kotaro Miwa[a] and Kazuhiro Ueda[b]

Abstract

In explaining the poor informational value of analysts' long-term earnings growth forecasts, studies have focused on the excessively aggressive forecasts induced by analysts' incentives and/or cognitive biases. This study reveals that forecasts' poor informational value is driven by analysts' reluctance to issue conservative forecasts, which may also be induced by their incentives and/or biases. We predict that this reluctance allows each firm's conservative forecast to be influenced by the firm's past performance and the noisy predictors of high-growth firms. Consistent with our prediction, we find that each firm's most conservative forecasts are those most strongly influenced by past performance and have the least predictive power.

Keywords: long-term earnings growth, reluctance to issue conservative forecasts, cognitive bias, analyst incentive structure.

1. Introduction

Long-term earnings growth expectations are crucial to stock price valuations. A competitive market should therefore induce financial analysts to issue accurate LTG forecasts. However, the extant research reveals that LTG forecasts are too optimistic on average and fail to provide sufficient information for the prediction of future high-growth firms (La Porta, 1996; Chan et al., 2003). The poor informational value of such forecasts can be explained in two ways.

The first explanation attributes an LTG forecast's poor informational value to excessively aggressive forecasts induced by analysts' cognitive bias. Several studies (La Porta, 1996; Billings and Morton, 2001; Chan et al., 2003) point out that analysts tend to extrapolate firms' long-term performance excessively, resulting in overly aggressive forecasts that lower the informational value of LTG forecasts.

The second explanation attributes the poor informational value of LTG forecasts to excessively aggressive forecasts induced by analysts' incentive structures. Substantial studies (Hunton and McEwen, 1997; Dechow et al., 2000) have found that analysts are rewarded whenever their employers win investment banking deals. Studies argue that the excessively aggressive forecasts induced by the promotion of investment banking deals have reduced informational value (e.g., Rajan and Servaes, 1997; Agrawal and Chen, 2005). Moreover, Francis and Philbrick (1993) argue that analysts' desire for information and access to management may produce excessively aggressive forecasts.

Thus, most studies have regarded excessive aggressive forecasts as a key detractor from the informational value of LTG forecasts. Since long-term growth forecasts tend to be optimistic, it is natural for studies to focus on the bias of aggressive forecasts. However, analysts' incentives and cognitive biases could also lower the informational value of LTG forecasts by inducing a reluctance to voice conservative forecasts.

McNichols and O'Brien (1997) report that analysts are reluctant to voice conservative opinions. Their low motivation to issue conservative forecasts could be induced by their extrapolation bias and/or their analysts' incentive structure. Analysts with sufficiently low earnings expectations keep silent or issue more moderate forecasts to avoid damaging investment banking deals and/or their relationships with management. In addition, analysts' extrapolation bias may make them

[a] Tokio Marine Asset Management Co. Ltd.
Email: miwa_tfk@cs.c.u-tokyo.ac.jp
[b] The University of Tokyo
Email: ueda@gregorio.c.u-tokyo.ac.jp

reluctant to issue forecasts lower than a firm's past performance; analysts may thus not issue conservative forecasts or alternatively issue more moderate forecasts for firms with good past performances.

Nevertheless, little research has provided established empirical analyses directed at whether the poor informational value of the LTG forecasts is actually attributable to this reluctance.

Thus, this study presents an empirical analysis of whether the poor informational value of LTG forecasts is driven by analysts' reluctance to issue conservative forecasts rather than the existence of excessive aggressive forecasts. This analysis could give a significant suggestion for the argument regarding the reason for the poor informational value of the LTG forecasts.

2. Hypothesis development

Hayes and Levine (2000) present a methodology for detecting forecast biases in short-term earnings forecasts arising from analysts' reluctance to issue conservative forecasts that uses the maximum likelihood estimation. Since a sufficient number of firm forecasts is required to run the maximum likelihood estimation, however, this methodology is not applicable to stocks that received only a small number of forecasts; actually, Hayes and Levine (2000) limited the analysis to firms that received at least 10 forecasts. As mentioned by Wang (2010), a firm tends to receive far fewer LTG forecasts than short-term earnings forecasts, and, actually, most firms in our sample received fewer than 10 LTG forecasts.

Thus, to test whether the poor informational value of LTG forecasts is driven mainly by analysts' reluctance to issue conservative forecasts, we introduce a novel methodology: we examine the difference in the influence of firms' past long-term performance and predictive power for relatively high-growth firms among the most aggressive, most conservative, and consensus (median) forecasts for each firm. We test the two hypotheses described below.

As mentioned, analysts' extrapolation bias may make them reluctant to issue conservative forecasts lower than a firm's past performance; analysts with low earnings expectations may keep silent or issue more moderate (upwardly biased) forecasts, especially for firms with a good past performance. If forecasts' poor informational value is driven mainly by analysts' reluctance, the influence of firms' long-term performance should be strongest on each firm's most conservative forecast. Hence, our first hypothesis is as follows:

Hypothesis 1: The influence of a firm's past long-term performance is strongest for each firm's most conservative forecast.

Analysts with sufficiently low earnings expectations could keep silent or issue more moderate forecasts through their extrapolation bias and/or incentives. Thus, analysts' extrapolation bias and/or incentives could cause firms' conservative forecasts to be a nosier predictor of high-growth firms because of analysts' reluctance to issue conservative forecasts. Accordingly, our second hypothesis is as follows:

Hypothesis 2: The predictive power for relatively high-growth firms is lowest for each firm's most conservative forecast.

3. Influence of firms' past performance

This section tests Hypothesis 1 by analyzing the difference in the influence of firms' past performance among the forecasts.

3.1 Data and Methodology

We obtained our sample of analysts' earnings forecasts from the unadjusted file of the Institutional Brokers Estimate System Summary (IBES). We collected data from stocks listed on the New York Stock Exchange (NYSE), American Stock Exchange (Amex), and NASDAQ that received at least three LTG forecasts. We excluded the shares of non-US firms and low-grade stocks[3]. The sample period spans the first-quarter end of 1988 to the quarterly end of 2007. The number of eligible firms ranges from 898 to 1923; on

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[3] These are defined as stocks whose share price is lower than $1 (i.e., penny stocks).

average, the sample comprises about 1450 firms.

To detect the (irrational) extrapolation bias in LTG forecasts, we use the following indicators of firms' past performance:

Long-term earnings growth: we include the geometric average of trailing EPS (earnings per share) growth rates. Then, we normalize the geometric average of the growth rate. Since a growth rate cannot be calculated when earnings are negative, we handle such cases by scaling the one-year (four-quarter) change in trailing EPS by the stock price as of the base quarter and normalize the time series average of the changes. This normalized value of EPS change relative to price is assigned to a firm with negative profits.

Long-term stock return: firms' past performance could be captured by stock returns. Billings and Morton (2001) indicate that high past stock returns induce strong optimism in analysts' forecasts. Thus, we include normalized log stock returns.

Long-term growth in OIBD (the operating income before depreciation): we also include the normalized geometric average of OIBD.

As an indicator of firms' past long-term performance, we consider growth rates or stock returns over the preceding five years.[4] The reason for using these indicators is not only that these variable could represents firm's past long-term performance, but also that the preference for past winners as identified by each firm's past long-term performance indicator does not improve the predictive power for relatively high-growth firms[5].

To compare the influence of firms' past long-term performance on the most aggressive/conservative forecasts with that on the consensus forecast, we evaluate the influence of firms' past performance on the difference between the most aggressive/ conservative forecasts and the consensus

(median) forecasts.

We should note, however, that these differences are still correlated with the levels of consensus forecast and analyst coverage. Differences attributable to these factors do not reflect differences in analyst opinions on firm growth between the most aggressive/ conservative forecasts and the consensus forecasts. Thus, we control for the consensus forecast and analyst coverage levels. We compare the influence of firms' past long-term performance among the forecasts as described below.

First, we perform a quintile analysis by dividing the firms into five portfolios on the basis of the difference between the most aggressive/conservative forecasts and the consensus forecasts adjusted according to the consensus forecast and analyst coverage levels; we then compare the average values of the past performance indicators among the quintiles.

The adjusted difference between the most aggressive/conservative forecasts and the consensus forecasts is calculated as follows. We denote the most aggressive (highest) long-term earnings growth forecast for firm i at time t as $hLTG_{i,t}$; the most conservative (lowest) long-term earnings growth forecast is denoted as $lLTG_{i,t}$; the consensus forecast, the median value of the analysts' forecasts, is denoted as $mLTG_{i,t}$. First, we divide the firms into five groups on the basis of analysts' firm coverage, defined by the log of the number of analysts who issue a long-term earnings growth forecast for the firm; second, within each group, firms are again divided into five groups based on $mLTG_{i,t}$ (the consensus forecast); finally, after forming a set of 25 (5X5) groups, we normalize $hLTG_{i,t} - mLTG_{i,t}$ / $lLTG_{i,t} - mLTG_{i,t}$, within each group as the adjusted $hLTG_{i,t} - mLTG_{i,t}$ / $lLTG_{i,t} - mLTG_{i,t}$.

At the end of each quarter between 1988 and 2007 (80 quarters), all the firms are divided into five portfolios, from H5 (the highest) to H1 (the lowest), on the basis of the adjusted $hLTG_{i,t} - mLTG_{i,t}$; the firms are also divided into five portfolios, from L5 to L1, on the basis of the adjusted $lLTG_{i,t} - mLTG_{i,t}$. The average of each normalized past performance

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[4] We also perform the analyses using the growth rates or stock returns from the preceding three years (12 quarters) and find that our result is not dependant on the settings.
[5] We analyzed an association between a realized profit growth and each indicators. The detailed result is available on request from the authors.

indicator (the long-term earnings growth, the long-term OIBD growth, and the long-term stock return) is calculated for each quintile. We compare the H5 value with that of H1 and the L5 value with that of L1. If each normalized past performance indicator is significantly higher for H5/L5 than for H1/L1, we can say that the most aggressive/ conservative forecast is more heavily influenced by firms' past performance than is the consensus forecast[6].

We also perform the following multivariate regression analysis: for each quarter, the difference in the most aggressive/conservative forecasts and the consensus forecast ($hLTG_{i,t} - mLTG_{i,t}$ / $lLTG_{i,t} - mLTG_{i,t}$) is regressed on three variables: the past long-term performance indicators, the consensus forecast, and the level of analyst coverage;[7] the inclusion of the consensus forecast and analyst coverage as explanatory variables is intended to control for the effect of these factors on $hLTG_{i,t} - mLTG_{i,t}$ and $lLTG_{i,t} - mLTG_{i,t}$. We then examine whether the coefficient of each performance indicator becomes significantly positive or negative. If the coefficient of each indicator becomes significantly positive (negative), the forecast is likely to be more (less) influenced by firms' past performance than is the consensus forecast.

3.2 Results

Table 1-b shows a significant positive relationship between $lLTG_{i,t} - mLTG_{i,t}$ and each performance indicator, indicating that the influence of past firm's performance is significantly stronger on firms' most conservative forecasts than on their consensus forecasts. The result, shown in Table 1-a, reveals a significant negative relationship between $hLTG_{i,t} - mLTG_{i,t}$ and long-term OIBD and stock return growth, and that there

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[6] All significance tests in our study are performed on the basis of autocorrelation consistent t-statistics, also used by Jegadeesh et al. (2004). Since a long-term earnings growth forecast is considered a growth forecast over three to five years (12 to 20 quarters), we set the parameter setting with regard to the number of non-zero serial covariances for calculating the t-statistics to 11.
[7] All the variables are normalized.

is no significant difference in the influence of the long-term earnings growth between the consensus forecast and the most aggressive forecast. Thus, our results suggest that the extrapolation bias is strongest for each firm's most conservative forecast, supporting Hypothesis 1.

Table 1 Influence of firms' past performance

a) The most aggressive forecast

	Earnings Growth	Stock return	Growth in OIBD
H5(High)	-0.009	-0.152	-0.034
H4	0.040	-0.041	0.017
H3	0.020	0.027	0.001
H2	0.023	0.077	0.009
H1(Low)	0.008	0.085	0.008
H5-H1	-0.017	-0.236	-0.042
	(-0.59)	(-5.28***)	(-2.06***)
Average Coefficient	-0.014	-0.087	-0.022
	(-1.25)	(-4.85***)	(-1.89**)

b) The most conservative forecast

	Earnings Growth	Stock return	Growth in OIBD
L5(High)	0.057	0.143	0.037
L4	0.031	0.099	0.031
L3	0.024	0.028	0.021
L2	0.004	-0.076	-0.012
L1(Low)	-0.040	-0.202	-0.076
L5-L1	0.098	0.345	0.113
	(2.48***)	(4.75***)	(3.52***)
Average Coefficient	0.032	0.138	0.064
	(5.08***)	(8.20***)	(5.13***)

Note: In each table, we show the average of each past performance indicator. H5 − H1/L5 − L1 represents the difference between H5 and H1/L5 and L1 mean values. Moreover, Average Coefficient represents the average coefficient of each past performance indicator. The figures in parentheses are autocorrelation-consistent t-statistics. Finally, *** and ** indicate one-sided statistical significance at 1%, and 5%, respectively.

4. Predictive power for growth firms

This section tests Hypothesis 2 by examining the differences in predictive power for relatively high-growth firms among the most aggressive, most conservative, and consensus forecasts.

4.1 Methodology

To compare the predictive power of each firm's most aggressive (conservative) forecast with that of each firm's consensus forecast, we first examine the relationship between the

subsequent earnings growth and the adjusted difference between the most aggressive (conservative) forecast and the consensus forecast (the adjusted $hLTG_{i,t} - mLTG_{i,t}$ / $lLTG_{i,t} - mLTG_{i,t}$). At the end of each quarter, all firms are assigned to one of five groups, from H5 to H1, on the basis of the adjusted $hLTG_{i,t} - mLTG_{i,t}$, and from L5 to L1 on the basis of the adjusted $lLTG_{i,t} - mLTG_{i,t}$. We compare the averages of the normalized subsequent three- and five-year earnings growths between H5 and H1 and between L5 and L1. If the H5/L5 value is higher than the H1/L1 value, we can say that the most aggressive (conservative) forecast has more predictive power for future high-growth firms than does the consensus forecast.

Furthermore, we regress the subsequent three- and five-year earnings growths at the end of each quarter on the three variables: the difference between the most aggressive (conservative) forecasts and the consensus forecast ($hLTG_{i,t} - mLTG_{i,t}$ / $lLTG_{i,t} - mLTG_{i,t}$), the consensus forecast, and the level of analyst coverage. [8] We then examine whether the coefficient of $hLTG_{i,t} - mLTG_{i,t}$ / $lLTG_{i,t} - mLTG_{i,t}$ is significantly positive or negative.

4.2 Results

The result, shown in Table 2, reveals that the subsequent three- and five-year earnings growths are significantly higher for H5 than for H1 and that the coefficient of $hLTG_{i,t} - mLTG_{i,t}$ is significantly positive. This result indicates that the predictive power for relatively high-growth firms is higher for the most aggressive forecast than for the consensus forecast. Furthermore, both the normalized subsequent three- and five-year growth rates are significantly lower for L5 than for L1, and the coefficient of $lLTG_{i,t} - mLTG_{i,t}$ is significantly negative. This result indicates that the predictive power is lower for the most conservative forecast than for the consensus forecast.

These results support Hypothesis 2—that the predictive power for relatively high-growth firms is lowest for each firm's most conservative forecast.

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[8] All the variables are normalized.

Table 2 Predictive power for high-growth firms

a) The most aggressive forecast

	Subsequent 5-year growh	Subsequent 3-year growh
H5(High)	0.147	0.128
H4	0.012	0.013
H3	-0.026	-0.033
H2	-0.051	-0.067
H1(Low)	-0.051	-0.067
H5-H1	0.198 (4.39***)	0.195 (4.43***)
Average Coefficient	0.073 (6.42***)	0.075 (6.70***)

b) The most conservative forecast

	Subsequent 5-year growh	Subsequent 3-year growh
L5(High)	-0.039	-0.052
L4	-0.044	-0.041
L3	-0.016	-0.039
L2	0.025	0.005
L1(Low)	0.106	0.103
L5-L1	-0.146 (-4.20***)	-0.154 (-3.42***)
Average Coefficient	-0.042 (-2.36***)	-0.042 (-2.22***)

Note: In each table, we show normalized subsequent 5-year and 3-year profit growth rates. H5 − H1/ L5− L1 represents the difference between the mean subsequent profit growth rate for H5/L5 and H1/L1. Average Coefficient represents the average coefficient of $hLTG_{i,t} - mLTG_{i,t}$ / $lLTG_{i,t} - mLTG_{i,t}$ in the regression models. The figures in parentheses are autocorrelation-consistent t-statistics. *** indicates one–sided statistical significance at 1%.

5. Conclusions

Studies have argued that the poor informational value of LTG forecasts is driven mainly by excessively aggressive forecasts induced by analysts' incentives and/or cognitive biases. However, since analysts might be reluctant to issue conservative forecasts owing to their incentives and/or cognitive biases, these incentives and cognitive biases could also reduce forecasts' informational value by making analysts reluctant to issue conservative forecasts. Thus, this study has examined whether the poor informational value of LTG forecasts is driven mainly by analysts' reluctance to issue conservative forecasts. To test this possibility, we introduced a novel empirical analysis method: we examined whether both the influence of firms' past long-term performance (extrapolation bias) and the predictive power for relatively high-growth firms differ across the long-term growth forecasts for single firms. We compared the extrapolation bias and the predictive power among the most aggressive,

most conservative, and consensus forecasts for each firm.

If the poor informational value of LTG forecasts were driven mainly by analysts' reluctance to issue conservative forecasts, each firm's conservative forecast would have the strongest extrapolation bias and the lowest predictive power for relatively high-growth firms.

Consistent with our prediction, we found that the influence of firms' past performance is strongest on the most conservative forecast and that the most conservative forecast has less predictive power than do the consensus and most aggressive forecasts.

Our empirical findings strongly support the possibility that the poor informational value of LTG forecasts is driven by analysts' reluctance to issue conservative forecasts rather than by the existence of excessively aggressive forecasts. Our findings offer the following significant contributions to the discussion regarding the poor informational value of forecasts.

In psychological terms, our finding on the extrapolation bias suggests that investors' cognitive biases help past firm performance strongly influence the forecasts by affecting analysts' willingness to issue conservative forecasts.

Our finding also gives significant suggestion regarding the influence of analyst incentive structures on LTG forecasts. Studies have argued that the desire to promote investment banking deals or maintain good relationships with management induces excessively upwardly biased forecasts. However, our findings raise the possibility that analysts with sufficiently low earnings expectations for a firm stay silent or issue a more moderate forecast to avoid a negative impact on investment banking deals and/or their relationship with management.

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