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Discussion of "Are earnings forecasts more accurate when accompanied by cash flow forecasts?"

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Abstract Call et al. (Rev Account Stud 2009, this issue) demonstrate that, relative to analysts who issue earnings but not cash flow forecasts, analysts who issue both forecasts (i) produce relatively more accurate earnings forecasts, (ii) have a better understanding of the persistence of current earnings, and (iii) are less likely to get fired. In my discussion, I highlight some general challenges facing research on analyst cash flow forecasts, demonstrate the diminishing difference in the relative accuracy over time (including its compete elimination by 2004), and examine the sensitivity of some of the evidence in Call et al. (2009) to the age of the forecast and to the presence of extreme bad-news earnings surprises.

Keywords Earnings forecasts · Cash flow forecasts · Forecast accuracy

JEL Classification G24 · G29 · M41

1 Introduction

Call et al. (2009) provide an interesting and thorough analysis of differences in the characteristics of analyst earnings forecasts for analysts who issued both earnings and cash flow forecasts (issuing analysts) and analysts who issue earnings but not cash flow forecasts (non-issuing analysts). Call et al. (2009) argue that when analysts generate both types of forecasts they must have forecasted the complete set of financial statements and ensured the articulation of the income statement, balance sheet, and statement of cash flows. This rigorous forecasting process should lead issuing analysts to develop a better understanding of the earnings process and, as a result, to produce higher-quality earnings forecasts compared with non-issuing

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analysts. Evidence presented in a variety of empirical tests supports their main predictions. In my discussion below, I first describe several general issues and challenges facing the emerging literature on analyst cash flow forecasts and then examine the robustness of some of the evidence reported in Call et al. (2009).

2 Challenges facing research on analysts cash flow forecasts

DeFond and Hung (2003) were the first to provide a comprehensive analysis of the determinants and the information content of analyst cash flow forecasts. Their paper, along with the increasing availability of cash flow forecasts on I/B/E/S, was followed (in a relatively short period) by a large number of studies investigating various aspects of cash flow forecasts. For example, researchers have examined the association between cash flow forecasts and certain firm or analyst characteristics (Zhang 2008), the role of these forecasts in disciplining earnings management behavior (McInnis and Collins 2008), market rewards to meeting or beating these forecasts (Brown and Pinello 2008), and analysts' propensity to issue such forecasts across countries (DeFond and Hung 2007).

One of the challenges encountered by this literature was to explain the initial appearance on I/B/E/S of these forecasts in 1993 and the subsequent growth in their availability. Several explanations emerged, such as increased collection efforts of these forecasts by I/B/E/S or analysts' desire to issue these forecasts in order to signal their superior talent. The one explanation that gained most prominence in this literature, however, was the "demand explanation" (for example, DeFond and Hung 2003, and others). This explanation posits that analysts initiated and have been gradually increasing their production of cash flow forecasts in response to a demand by investors in cases where earnings are likely to be of low quality. The validity of this (intuitively appealing) explanation implicitly relies on two critical (and related) assumptions. First, that cash flow forecasts supplied by the analysts in response to investor demand are of a sufficiently high quality to be valuable to investors in evaluating the performance and the prospect of the firm. Second, that these cash flow forecasts are not a simple extrapolation of analysts' already existing earnings forecasts. To validate these assumptions, prior literature has generally relied on the description of the construction of these cash flow forecasts in the I/B/E/S manuals and on the anecdotal evidence in DeFond and Hung (2003) who examine "several" full text reports and conclude that these "cash flow forecasts are not a trivial translation of predicted earnings, but rather the result of difficult and costly information processing" (DeFond and Hung 2003, p. 81). Call et al. (2009) reach the same conclusion after reading "multiple" analysts reports. In contrast to this anecdotal evidence offered to support the sophistication of analyst cash flow forecasts, a recent paper by Givoly et al. (2009) is set to provide large sample evidence on the properties and the degree of sophistication of these forecasts.

Using cash flow and earnings forecasts for the years 1993 through 2005, Givoly et al. (2009) find that, relative to their earnings forecasts, analyst cash flow forecasts are significantly less accurate, more biased, and are less frequently revised during the forecasting period. Furthermore, they examine empirically whether analysts do,

in fact, appear to produce their cash flow forecasts using sophisticated procedures involving predictions of working capital accounts or whether, alternatively, these forecasts appear to be a naïve extrapolation of their already existing earnings forecasts. They construct a mechanical measure of analyst cash flow forecasts that is equal to the sum of the analyst earnings forecasts and depreciation and amortization (per share); they then compare the accuracy of this measure to that of analyst cash flow forecasts. Evidence from Givoly et al.'s (2009) empirical analysis indicates that the differences in the accuracy of the naïve and the analyst cash flow forecasts are small and statistically insignificant. Furthermore, they demonstrate that the change in working capital provides only modest explanatory power for analysts' cash flow forecasts (beyond earnings forecasts, depreciation expense, and other accrual adjustments). Overall, Givoly et al. (2009) conclude that the quality of analysts' cash flow forecasts are significantly lower compared with their earnings forecasts and that these forecasts appear as a straightforward extension of the analyst earnings forecasts.

Givoly et al.'s (2009) findings and conclusions contradict the widespread belief in this literature that these cash flow forecasts are derived using sophisticated procedures and, more generally, cast doubts on the validity of the demand explanation discussed above. This, I believe, constitutes the biggest challenge to some of the inferences offered by prior studies and by Call et al. (2009). For example, it is puzzling how the issuance of these apparently inaccurate and mechanical cash flow forecasts might lead to more accurate earnings forecasts for issuing compared with non-issuing analysts, as documented in Call et al. (2009). Future research in this area would benefit from a careful consideration of the implications of the low quality of cash flow forecasts on the question examined, the empirical design, and inferences drawn from the analysis.

3 Specific comments on Call et al. (2009)

3.1 Measurement of the relative earnings forecast accuracy

Call et al. (2009) measure earnings forecast accuracy as the deviation of the absolute value of an analyst earnings forecast error from the mean absolute earnings forecast errors across *all* analysts covering the firm in a give year. That the mean absolute earnings forecast errors includes the earnings forecasts of both issuing and non-issuing analysts introduces unnecessary noise and reduces the power of this measure (see also discussion in footnote 18 of Call et al. 2009). A more suitable (and perhaps more intuitive) approach would be to compute, for each firm/year, two separate earnings forecast accuracy measures: one based only on earnings forecasts by issuing analysts and the other only on those earnings forecasts issued by non-issuing analysts. This approach captures more precisely differences in the properties of the earnings forecasts of issuing and non-issuing analysts while still controlling for firm-specific factors affecting the difficultly of the earnings forecasts. Panel C of Table 1 in Call et al. (2009) provides a univariate comparison of the relative earnings forecast accuracy based on this alternative accuracy measure and finds

Table 1 Relative accuracy of earnings forecasts for issuing versus non-issuing analysts

	Issuing analysts					Non-issuing analysts					% Issuing analysts more accurate	*p*-value for test of difference in	
	Mean	Q1	Median	Q3	SD	Mean	Q1	Median	Q3	SD		Mean	Median
Panel A: all observations (N = 13,935)													
Absolute value of earnings forecast error	0.213	0.017	0.054	0.176	0.506	0.242	0.020	0.062	0.200	0.556	55.0%	<.0001	<.0001
Age of forecast	107.5	65.0	97.0	133.0	67.9	130.8	92.0	122.0	158.7	65.0			
Panel B: Excluding forecasts issued more than 365 days prior to earnings announcement (N = 13,409)													
Absolute value of earnings forecast error	0.207	0.016	0.052	0.169	0.509	0.240	0.020	0.060	0.193	0.694	55.0%	<.0001	<.0001
Age of forecast	102.3	63.0	95.5	127.0	60.2	126.2	90.5	119.8	153.6	57.7			
Panel C: Excluding forecasts issued more than 180 days prior to earnings announcement (N = 11,129)													
Absolute value of earnings forecast error	0.183	0.014	0.045	0.145	0.436	0.187	0.014	0.045	0.147	0.461	49.4%	0.497	0.727
Age of forecast	71.8	47.0	72.1	97.0	34.7	78.0	59.0	79.1	96.0	29.6			

This table reports descriptive statistics on the accuracy and the age of the absolute value of analyst earnings forecasts separately for analysts who issue both earnings and cash flow forecasts (issuing analysts) and analysts who issue earnings forecasts but do not issue cash flow forecasts (non-issuing analysts). Panel A reports statistics for all available observations. Panels B and C provide these statistics after excluding forecast observations issued more than 365 and 180 days prior to the earnings announcement date, respectively. For each firm-year, absolute value of earnings forecast is calculated as the absolute value of the difference between the consensus earnings forecast and the actual earnings divided by the absolute value of the actual earnings. Consensus earnings forecast is calculated separately for issuing and non-issuing analysts in a given firm-year. Absolute values of the earnings forecast error are truncated at the 99th percentile. One-year ahead forecast and actual earnings data are obtained from I/B/E/S detail file for the years 1993–2005

evidence consistent with the results obtained using their *MAFE* measure. However, because their main tests are still conducted using the potentially noisy *MAFE*, the extent of the difference in earnings forecast accuracy between issuing and non-issuing analysts remains unclear.

3.2 Are the results driven by the inclusion of stale forecasts?

For each analyst-firm-year observation, Call et al. (2009) identify the most recent earnings and cash flow forecasts prior to the announcement of earnings and further control for the age of the forecast in their regression analysis. While this appears a reasonable procedure to control for potential effects on the analysis of the inclusion of stale forecasts, an inspection of the descriptive statistics in Table 1 reveals that the forecasts included in their study are, on average, about 5 months old (with a median of over 3 months). That over half of the forecasts in Call et al. (2009) are over 3 months old raises concerns about the contribution of these potentially stale forecasts to the evidence of better accuracy by issuing analysts. Many researchers in this area exclude from their analyses all forecasts outstanding for more than 90 days prior to the earnings announcements. To examine the sensitivity of the relative earnings forecast accuracy to the age of the forecasts, I conduct a limited replication of the analysis in Call et al. (2009).

Table 1 provides descriptive statistics for comparisons of the absolute earnings forecast errors for issuing and non-issuing analysts. For each firm-year, the absolute value of earnings forecast error is calculated as the absolute value of the difference between the consensus earnings forecast and the actual earnings divided by the absolute value of the actual earnings. Consensus earnings forecast is calculated separately for issuing and non-issuing analysts in a given firm-year. Panel A of Table 1 reports statistics for all available observations. It confirms the significantly greater earnings forecast accuracy of issuing compared with non-issuing analysts. For example, the mean (median) absolute earnings forecast errors for issuing analysts is 0.213 (0.054) compared to 0.242 (0.062) for the non-issuing analysts.[1] Note that, while the mean and median differences are statistically significant, the greater accuracy of issuing analysts' earnings forecasts is only attained in 55% of the cases. The average age of the forecasts is 107.5 and 130.8 days for issuing and non-issuing analysts, respectively (compared with 109 and 138 days in Call et al. 2009). Panel B of Table 1 demonstrates that excluding individual earnings and cash flow forecasts issued more than 365 days prior to the earnings announcements does not alter the evidence in panel A. Further restricting the sample to forecasts issued up to 180 days prior to the earnings announcements (still, a fairly 'liberal' restriction), however, eliminates the evidence of superior accuracy by issuing analysts. As reported in Panel C, the mean and median differences in the accuracy of earnings forecasts are insignificant, and the proportion of issuing analysts associated with more accurate earnings forecasts is now only 49.4%. That the superior accuracy of earnings forecasts by issuing analysts is, at least partially,

[1] These statistics differ from those reported in Panel C of Table 1 of Call et al. (2009) potentially due to different truncation/windsorization procedures.

attributed to the inclusion of older and potentially irrelevant earnings forecasts is inconsistent with the notion that this superior accuracy arises from their use of a more rigorous structure to forecasting financial statements and with their better understanding of the individual earnings components. These procedures should result in more timely forecasts issued closer to the earnings announcement date.

3.3 Temporal trends in earnings forecast accuracy

Prior research had documented the existence of temporal trends in earnings forecast data. For example, Abarbanell and Lehavy (2007) note the precipitous reduction in the negative mean earnings forecast errors in 1991 and the increase over time in the proportion of good-news earnings surprises. Motivated by these earlier findings, I examine the temporal patterns in earnings forecast accuracy by issuing and non-issuing analysts.

Figure 1 depicts the mean earnings forecast accuracy for issuing and non-issuing analysts by year. It is evident from the graph that, while the differences in the relative accuracy are noticeable prior to 2003, they essentially disappear by 2004. It would be instructive to examine whether the evidence in Call et al. (2009) still holds after inclusion of data after 2005. More important, however, future research in this area should be aware of this finding and carefully consider its implications on the specific question examined.

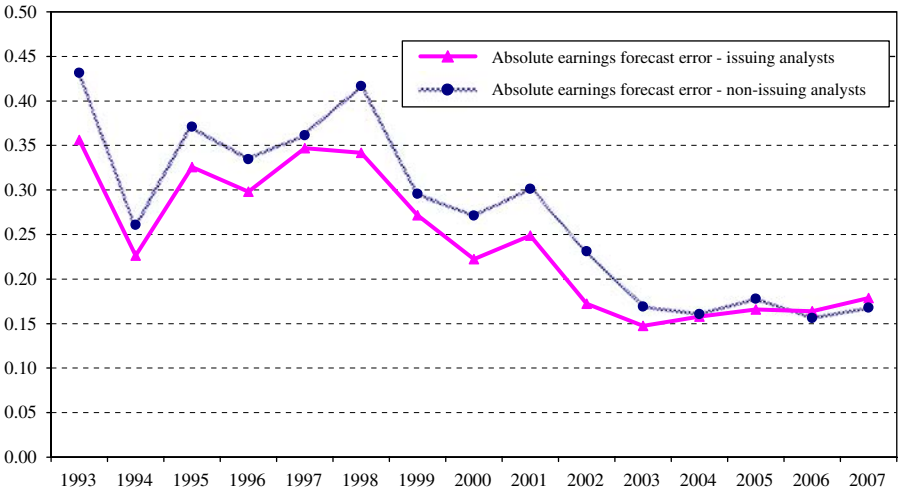

Fig. 1 Earnings forecast accuracy for issuing and non-issuing analysts, 1993–2007. This figure depicts the mean of the absolute value of earnings forecasts for analysts who issue both earnings and cash flow forecasts (issuing analysts) and analysts who issue earnings forecasts but do not issue cash flow forecasts (non-issuing analysts). For each firm-year, the absolute value of the earnings forecast is calculated as the absolute value of the difference between the consensus earnings forecast and the actual earnings divided by the absolute value of the actual earnings. Consensus earnings forecast is calculated separately for issuing and non-issuing analysts in a given firm-year. Absolute values of the earnings forecast error are truncated at the 99th percentile. One-year ahead forecast and actual earnings data are obtained from I/B/E/S detail file for the years 1993–2007

3.4 Relative accuracy and the 'tail asymmetry' in forecast error distributions

As seen in Table 1, while earnings forecasts of issuing analysts are, on average, more accurate than those of non-issuing analysts, the proportion of issuing analysts' earnings forecasts that are more accurate is not pervasive (55% of the cases). This evidence raises the possibility that some of the statistical tests of differences are disproportionally affected by the "tail asymmetry" documented in Abarbanell and Lehavy (2003). This asymmetry pertains to the existence of a larger number and a greater magnitude of observations that fall in the extreme negative relative to the extreme positive tail of the forecast error distributions. Abarbanell and Lehavy (2003) document the existence of this asymmetry and demonstrate its disproportional effect on statistical tests and on inferences of apparent analyst bias and inefficiency.

I examine for the existence and the potential impact of the tail asymmetry in the conditional forecast error distributions of issuing vs. non-issuing analysts. Figure 2 depicts the 1st to the 99th percentile values of the (signed) earnings forecast error distributions for issuing and non-issuing analysts. The range of forecast errors is quite large, and the existence of the tail asymmetry is evident. For example, the

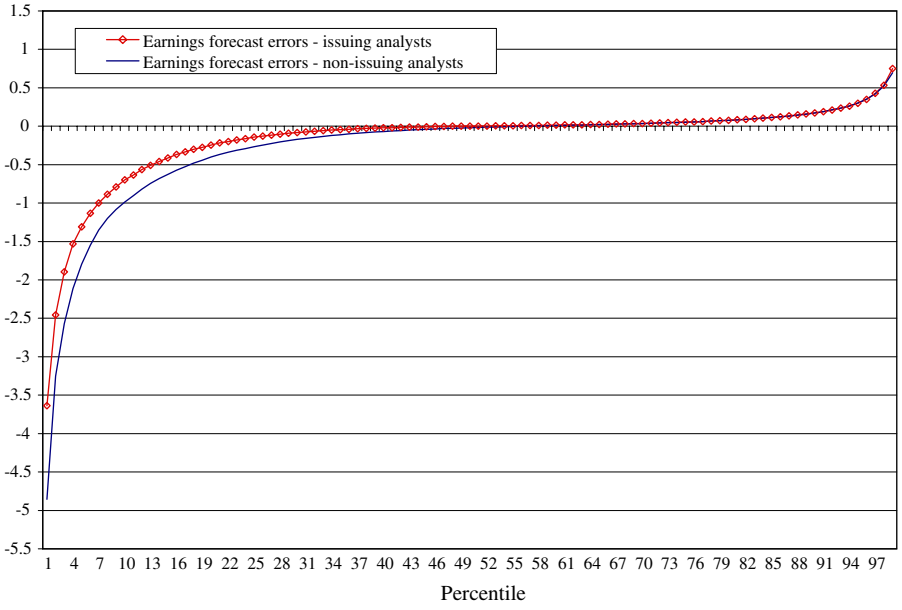

Fig. 2 Percentile values of earnings forecast errors for issuing and non-issuing analysts, 1993–2005. This figure depicts the 1st to the 99th percentile values of earnings forecast distributions for analysts who issue both earnings and cash flow forecasts (issuing analysts) and analysts who issue earnings forecasts but do not issue cash flow forecasts (non-issuing analysts). For each firm-year, earnings forecast error is calculated as actual earnings minus consensus earnings forecast divided by the absolute value of the actual earnings. Consensus earnings forecast is calculated separately for issuing and non-issuing analysts in a given firm-year. Earnings forecast errors are truncated at the 1st and 99th percentiles. One-year ahead forecast and actual earnings data are obtained from I/B/E/S detail file for the years 1993–2005

value of the 5th percentile of forecast errors for issuing analysts is −1.3 compared with a value of 0.3 at its 95th percentile. Similarly, the value of the 10th percentile of forecast errors for non-issuing analysts is −0.99 compared with a value of 0.17 at its 90th percentile. More important, however, is the graphical evidence that the superior earnings forecast accuracy of issuing analysts appears to be concentrated in the most extreme bad-news earnings surprises. The two lines track each other closely in other parts of the distribution. To get a sense of the effect of this finding on the evidence of the relative accuracy, I exclude from both distributions forecast error observations that exceed −0.7 (to make it comparable with the 99th percentile value of these distributions, which is ∼0.7). Doing so reduces the sample size by merely 8% but eliminates the statistical significance of the difference in mean absolute forecast errors of issuing and non-issuing analysts. That the evidence of a greater earnings forecast accuracy of issuing analysts appears to be driven by only 8% of the observations that are associated with extreme bad-news earnings surprises suggests that the explanation offered in Call et al. (2009) of differential forecasting procedures may not be complete and may need to be further refined to account for the role of these extreme forecasts on the overall evidence.

4 Summary and some potentially unresolved issues

Call et al. (2009) provide a comprehensive analysis of the implications of issuing cash flow forecasts on analysts' earnings forecast accuracy, their understanding of the persistence of earnings components, and the probability of the analyst being fired. While they provide an interesting and compelling set of empirical findings, my discussion and analysis above highlight several potential issues with the robustness and the interpretation of the evidence. First, I remain somewhat skeptical that the primary reason for the greater earnings forecast accuracy of issuing analysts is that they employ a more structured approach to forecasting financial statements compared with non-issuing analysts. The alternative approach (adopted by non-issuing analysts) is never discussed nor is there anecdotal evidence in Call et al. (2009) that non-issuing analysts do not, in fact, provide forecasts of the balance sheet, income statement, and statement of cash flows in their research reports. Furthermore, given the benefits apparently accruing to issuing analysts, a question remains as to why some analysts opt not to issue such forecasts. Another challenge to the inferences offered in Call et al. (2009) are the findings on the effect of the age of the forecast on the relative earnings forecast accuracy and the evidence of the disproportional role the extreme bad-news forecast errors have on the significance of the evidence.[2] While beyond the scope of this discussion, I suspect that exploring a more refined explanation for the evidence in Call et al. (2009) could result in new evidence that is consistent with some of the issues raised in my discussion.

[2] The age of the forecast and the sign and magnitude of the associated forecast errors are not independent. In this sample, the correlation is approximately −12%. Furthermore, forecast error observations in the tail of the distribution (in Fig. 2) are on average 30% older than other forecasts.

Finally, the evidence in Givoly et al. (2009) on the low quality and apparent lack of sophistication of these cash flow forecasts leaves unanswered the more general question of why investors would demand (and analysts supply) such forecasts. It also makes it challenging to envision circumstances under which the presence and content of these forecasts would assist investors in making better decisions. Addressing these and other issues in future research on analyst cash flow forecasts is warranted.

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