How does data vendor discretion affect street earnings?

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Abstract

The earnings consensus forecasts provided by Thomson Reuters I/B/E/S, commonly referred to as "Wall Street Estimates", have been widely used by investors and researchers as market expectation of earnings. We examine I/B/E/S' discretionary decision to exclude forecasts from the consensus to understand the economic forces that shape this process. Our results reveal that the probability of exclusions increases with both analyst EPS forecast errors and forecast optimism. These findings are robust to controlling for both the accounting basis and timeliness of the forecast, to instrumenting EPS forecast accuracy and optimism by the corresponding analysts' revenue forecast accuracy and optimism, and to a subsample using which we can explicitly control for the accounting basis of a forecast. Next, we find the positive association of exclusion likelihood with forecast optimism becomes stronger when firm managers have higher incentives to meet or beat consensus earnings benchmark (hereafter MB), implying managers influence the process. Lastly, investors respond to consensus revisions resulting from forecast exclusions and these reactions do not reverse, suggesting consensus revisions alter market expectation of earnings and improve price efficiency. Collectively, the evidence is consistent with a model in which I/B/E/S exercises discretion to remove inaccurate forecasts based on private information received from managers, which improves accuracy on one hand, and on the other hand provides opportunities for managers to improve their ability to meet or beat the consensus.

1 Introduction

Earnings estimates serve as a measure of market earnings expectations, and their releases affect stock prices because investors revise their assessment of firms' future cash flows upon receiving these estimates (Kothari 2001). Various information intermediaries (e.g., Thomson Reuters I/B/E/S, Factset/JCF, Bloomberg, and Zacks) compete to supply consensus measures of earnings expectations using analyst forecasts. Recently, due to technological innovation, these analyst forecast aggregators face increased competition from crowdsourced platforms such as Estimize and Seeking Alpha, which aggregate forecasts provided by investors rather than analysts.[1] In this paper, we examine the aggregation process of individual analyst forecasts into the consensus using I/B/E/S data, to understand the incentives of forecast aggregators involved in this process.

I/B/E/S is the main supplier of earnings estimates in the marketplace and their estimates are commonly referred to as "Wall Street Estimates."[2] To maintain market share, I/B/E/S developed a system to improve consensus forecasts accuracy by excluding stale and inaccurate earnings forecasts from consensus calculation (Thomson Reuters, 2016).[3,4] Specifically, I/B/E/S excludes forecasts which do not constitute "effective" projections of future earnings by (i) excluding stale forecasts, such as those that have not been reviewed since the most recent EA,[5]

[1] Jame et al. (2016) shows that Estimize forecasts are incrementally useful to I/B/E/S forecasts, suggesting that crowdsourced forecasts constitute a useful supplemental source of information in capital markets.

[2] I/B/E/S are relied upon by over 70% of the top US and European asset managers (https://financial.thomsonreuters.com/en/products/data-analytics/company-data/ibes-estimates.html).

[3] Ramnath et al. (2004) argue that it is possible that the documented improvement in I/B/E/S consensus accuracy over time (Brown 1997; 2001) might be attributed to the increased competition due to the entry of First Call to the earnings forecast industry in the early 1990s.

[4] Forecast exclusions by I/B/E/S are a common practice. Over our sample period of 1994-2015, 8,142 (63%) firms and 86,642 (25%) firm-quarters have at least one analyst forecast excluded by I/B/E/S.

[5] More specifically, I/B/E/S/ excludes those estimates that have not been reviewed or confirmed by contributing analysts for 105 days or within ten days of an earnings announcement (Thomson Reuter, 2016). As an empirical fact, even though these guidelines can be viewed as "bright line" rules which can be administered without discretion,

and (ii) excluding forecasts which do not use the "majority" accounting basis. Because I/B/E/S records the timing of all forecast updates, the staleness requirements are straight forward and can be enforced mechanically. However, it is non-trivial to determine which forecasts constitute the "majority basis". I/B/E/S commonly surveys the contributing analysts in consultation with investor relations officers (hereafter, IR officers) for the covered stock. IR officers note that they interact with consensus vendors on a monthly or quarterly basis.[6] By talking to firms, I/B/E/S may obtain private information about actual earnings and impound this information into its consensus forecasts by discretionarily excluding inaccurate estimates. However, doing this might also provide firm managers an opportunity to influence the level of consensus forecasts to their own benefits (e.g., increase the likelihood of meeting/beating the consensus forecasts). For example, CFO.com (Nov 4, 2013) reported that the IR officer of a wireless technology company contacted Thomson Reuters and convinced them to remove optimistic forecasts from the current quarters' consensus while retaining optimistic forecasts for the one-year ahead consensus, a horizon over which firms prefer optimism (Ke and Yu 2006).

In this paper, we focus on the discretion I/B/E/S uses in the process of excluding forecasts from consensus calculation to understand the incentives of various parties involved in this process. Specifically, we examine: 1) whether the exclusion discretion benefits investors by improving the accuracy of consensus forecasts (efficiency view); 2) whether the exclusion discretion benefits managers by providing them a channel through which they can meet or beat the earnings benchmark (hereafter MB) (opportunism view).

I/B/E/S/ retains (i.e. does not exclude) approximately 25 percent of estimates not reviewed since the prior earnings announcements.

[6] http://www.vararesearch.de/site_de/news/presse/NIRI_1011_Consensus.pdf

Using Thomson Reuters' I/B/E/S data over the period spanning 1994 and 2015, we have three main findings. First, at the univariate level the excluded forecasts by I/B/E/S are on average less accurate and more optimistic than the included forecasts. Second, multivariate analyses reveal that forecast errors and optimism are incrementally positively associated with exclusion likelihood over and above each other, suggesting that I/B/E/S systematically excludes inaccurate and optimistic forecasts at her discretion, consistent with both the efficiency and opportunism view. It is important to note that we control for firm-quarter two-way fixed effects and forecast timeliness in all analyses allowing us to isolate the effect of analyst forecast attributes on I/B/E/S' discretionary exclusion decision. A one standard deviation increase in forecast errors increases the probability of exclusions by 5%. Given the 6.4% unconditional probability of exclusions in our sample, exclusions are very sensitive to forecast accuracy. In addition, a forecast exceeding subsequently reported earnings increases the probability of exclusion by 2.8%, suggesting an asymmetry in exclusions which caters to managers' incentives to meet or beat the consensus.

To address concerns that our results are driven by the implementation of bright line rules, such as excluding stale estimates or those that do not follow the majority basis, we conduct an extensive set of robustness tests. First, our base-line specification includes an extensive set of controls for the timeliness of forecasts, it is unlikely the bright line policy on timeliness can explain our findings. Second, to check if our results are sensitive to the application of majority accounting basis rule, we estimate our model using a small subset of forecasts for which we can control for the use of majority basis following Brown and Larocque (2013). We continue to find a significant association between forecast exclusions and both accuracy and optimism. In addition, we find no association between the use of majority basis and forecast optimism, suggesting that the use of majority basis unlikely constitutes a correlated omitted variable in our OLS tests of the

opportunistic view. Third, we estimate the effect of discretion orthogonal to the accounting basis by instrumenting earnings forecast errors with the errors of sales forecasts issued by the same analyst at the same time because the limited sample raises concerns about selection effects. Our identification assumption is that sales forecast accuracy and optimism are associated with EPS forecast accuracy and optimism while being orthogonal to the use of non-majority basis cost items.[7] Our 2SLS procedure produces identical inferences as the reduced form results, as both forecast optimism and forecast errors are significantly positively associated with exclusions.

Second, we conduct a set of additional analyses which buttresses the link between opportunistic exclusions and managerial incentives. First, we exploit inter-temporal variation in managers' incentives to have optimistic forecasts removed. If being excluded reflects an analysts' failure to model the economic fundamentals of a firm in a similar manner as other analysts, exclusion decisions should be similar across all horizons for the same analyst. However, if it is driven by managers' desire to meet/beat street earnings, we would expect to observe a stronger result for short horizon forecasts than long horizon forecasts. This is because short horizon forecasts (i.e., forecasts issued within 30 days before earnings announcements) have an immediate impact on the likelihood of managers' meeting/beating the street earnings. Consistent with exclusion decisions reflecting managers' reporting objectives, we find that I/B/E/S/ systematically excludes short-horizon but not long-horizon optimistic forecasts. Second, we conduct cross-sectional tests. We find that I/B/E/S is more likely to exclude optimistic forecasts when firms have a longer streak of MB (Skinner and Sloan 2002), or when firms have high information asymmetry,

[7] In this analysis, we delete all EPS forecasts with an excluded sales forecast. This ensures that under the assumption that majority basis explains all exclusions, all variation in sales forecast accuracy cannot be explained by the use of a non-majority basis sales forecast. In addition, all analyses include analyst fixed effects. Our within analyst estimations ensure that our results are not attributable to poor analysts issuing inaccurate forecasts and estimating costs using a non-majority basis.

both of which are consistent with the opportunistic view that managers' MB preference influences I/B/E/S' exclusion decisions.

Lastly, we investigate investors' reaction to I/B/E/S forecast exclusions. First, we test whether the market reacts to exclusion announcements. We create a measure of the consensus revision caused by the exclusion and show that investors react to the consensus revision during the 5-day announcement window. In addition, the market reaction does not reverse – it persists till the announcement of current quarter earnings. Taken together, the evidence suggests forecast exclusions affect market earnings expectations and accelerate earnings information into stock prices.

In summary, our findings suggest that I/B/E/S gains private access to managers' information and uses this information to improve the accuracy of consensus forecasts by excluding forecasts with large errors. However, managers' preference to meet/beat also influences this process, resulting in higher likelihood of exclusions of optimistic forecasts. On the net I/B/E/S forecast exclusions improve consensus accuracy and stock price efficiency.

Our findings contribute to the literature in three ways. First, the study enhances our understanding of forecast aggregators' role in the capital market. The conventional view is that they simply combine earnings forecasts issued by Wall Street analysts without much modification. Thus they themselves do not provide incremental information to the capital market. Using I/B/E/S as a representative of the aggregators, we show that the aggregator effectively provides a check on untimely or inaccurate earnings forecasts and exclude them from the consensus. Given that I/B/E/S consensus serves as the market expectation of earnings and determines security prices, our findings imply that the exclusion procedures that I/B/E/S implements improves price efficiency.

Second, our study contributes to our understanding of the tools managers use to meet or beat consensus estimates. Prior literature establishes that managers (1) issue pessimistic earnings guidance (i.e., Kasznik and Lev 1995; Matsumoto 2002) or (2) engage in accrual and/or real activities manipulation (i.e., Abarbanell and Lehavy 2003; Dechow, Richardson and Tuna, 2003; Roychowdhury 2006). Our findings suggest managers can meet or beat the street earnings by influencing the aggregation of earnings estimates, without influencing either the earnings forecasts themselves or the actual earnings.

2 Background and hypothesis development

In this section, we first describe the process I/B/E/S/ uses to generate consensus forecasts. We then develop two testable hypotheses. The first hypothesis is motivated by I/B/E/S' incentive to improve consensus forecasts accuracy.[8] That is, I/B/E/S utilizes its private information access to management to exercise discretion to exclude inaccurate forecasts. The second hypothesis is built upon prior literature which documents that firms have incentives to meet or beat the consensus forecasts. We argue that firms might influence I/B/E/S to remove optimistic forecasts from the consensus.

2.1 The process I/B/E/S uses to generate the consensus earnings estimates

For each firm, I/B/E/S consensus estimates are calculated as the mean of the most recent estimate submitted by a brokerage, so long as I/B/E/S deems the estimate "effective." I/B/E/S has two classifications for ineffective estimates, excluded estimates, which are excluded from the

[8] I/B/E/S has incentive to improve consensus forecast accuracy for maintaining competiveness in the product market as a data vendor, or for various other reasons such as cross-selling Thomson Reuter's other products.

consensus but still available to commercial clients on the detail file, and stopped estimates, which are excluded from the consensus and no longer visible on the detail file. Excluded estimates arise because I/B/E/S/ excluded the estimates from the consensus, while stopped estimates arise because the analyst informed I/B/E/S/ they stopped following the company. Our study focuses on excluded estimates, because we can attribute the exclusion to the forecast aggregator.

While I/B/E/S retains the authority to exclude any "ineffective" estimate, it also has specific exclusion policies related to staleness and accounting basis. First, I/B/E/S removes 'stale' forecasts, estimates that have not been confirmed or revised following (1) the issuance of management guidance, and/or (2) a prior earnings announcement or (3) a 105 day period for a non-fiscal year end quarter (120 days for the fourth fiscal quarter). Second, I/B/E/S excludes estimates if the accounting items used in the forecast are different from that used by the "majority" of analysts. The reason analysts sometimes differ with respect to the items they include is that I/B/E/S wishes to report "actuals on an operating basis, whereby a corporation's reported earnings are adjusted to reflect the basis that the majority of contributors use to value the stock" (Thomson Reuters 2010). In theory when one or more analysts use a different accounting basis, Thomson Reuters will call an analyst using a non-majority basis and ask her to adjust the forecast. In practice, however, IR professionals report that the creation of a "majority" basis is highly subjective. "No two sell-side analysts build their financial models in the same way. Some base their estimates on operating results while others base their estimates on GAAP results. Some include certain items while others exclude these items." In addition, prior academic research suggests over half of all forecasts use a different accounting basis than the majority (Brown and Larocque 2013). Prior research has not investigated how this affects the construction of the consensus, although the frequency of differences in accounting basis implies that either I/B/E/S/

removes a large number of forecasts from the consensus or applies its majority basis rules with discretion.

2.2 Incentives to create an accurate consensus

The manner in which I/B/E/S implements these policies likely depends on its incentives. The business model that I/B/E/S follows is to provide individual earnings estimates submitted by brokerage houses and consensus earnings estimates to its subscribers in exchange for subscription fee. Buy-side analysts, brokerage houses employing sell-side analysts, other large investors, and the media use I/B/E/S data to make investment decisions, evaluate analyst performance, and monitor changes in market expectations of firm performance (Ertimur, Mayew and Stubben 2011). Although I/B/E/S does not compensate analysts for their earnings estimates in monetary term, analysts receive exposure to the broad base of I/B/E/S subscribers (Ertimur et al. 2011).

I/B/E/S competes with a number of other information intermediaries in the product market space. One source of product differentiation between I/B/E/S and its competitors might lie in the quality of the summary file, which excludes ineffective estimates to provide more accurate consensus earnings estimates. As discussed earlier, besides implementing policies that are designed to improve forecast accuracy, I/B/E/S might have private access to management such as IR officers. If I/B/E/S utilize its private information in making exclusion decisions, we hypothesize:

H1: [*Efficiency View*] Forecast estimates with lower accuracy are more likely to be excluded from the consensus calculation, controlling for I/B/E/S bright-line policies for determining the exclusion of forecast estimates.

2.3 Firms' influence on the optimism of consensus earnings estimates

As mentioned above, if I/B/E/S utilizes information from company IR officers in the process of generating the consensus earnings estimates, then firm managers might have an opportunity to influence the level of consensus earnings estimates. In an article in institutional investor magazine, a large number of IR officers report interacting with vendors who aggregate analyst forecasts on a quarterly basis. For instance, one IR officer reported going "line-by-line" through 22 analysts' models each quarter and then reaching out to vendors like I/B/E/S/ to discuss any variances.

While the conversations with I/B/E/S could simply reflect IR officers providing information to I/B/E/S, these conversations could also be strategic because of firm managers' incentives to meet or beat. Prior studies suggest that firm managers have strong incentives to meet or beat analyst consensus estimates because (1) missing analyst consensus estimates by even a small margin can lead to a dramatic reduction in stock price (i.e., Barth, Elliot and Finn 1999 ; Skinner and Sloan 2002); (2) meet or beating consensus estimates can enhance firms' reputation with stakeholders, such as customers, suppliers and creditors (Burgstahler and Dichev 1997); (3) failure to meet consensus estimates result in pay cuts for the CEO (Matsunaga and Park 2001).

If I/B/E/S/ uses discretion in their decision to exclude inaccurate forecasts, they will be receptive to the input from firm managers because managers possess private information about firm performance. However, because of managers' incentives to meet or beat, firm managers might communicate selectively with I/B/E/S. That is, they communicate negative private information when doing so will improve the firm's probability of meeting or beating while withhold positive private information. This leads to disproportionally higher likelihood of

exclusions of optimistic forecasts because doing so improves the likelihood of meeting/beating the consensus forecasts.

This prediction leads to the following hypothesis:

H2: [*Opportunistic View*] Optimistic forecasts are more likely to be excluded, controlling for forecast accuracy and I/B/E/S bright-line policies for determining the exclusion of forecast estimates.

3 Sample construction and descriptive statistics

3.1 Sample construction

Our study focuses on the construction of the consensus earnings forecast outstanding at the time of an earnings announcement, which is commonly referred to as "street earnings." While we are interested in explaining consensus forecast changes our analysis primarily uses detail files, on which we can observe both individual analysts issuing forecasts using the estimates file and I/B/E/S acting to remove them from the consensus, using the "Detail History – Excluded Estimates" file.[9] Specifically, we select the last forecasts issued by each brokerage house for each stock before a quarterly earnings announcement, because these are the forecasts that without exclusion will be averaged into the consensus. Then we merge in I//B/E/S' exclusion decisions for these individual analyst forecasts.[10] We also merge in the last consensus earnings estimates

[9] I/B/E/S "Detail history – Excluded estimates" file includes all the individual analyst forecasts that are excluded from the consensus calculation. This file contains basic information about these excluded forecasts (i.e., I/B/E/S firm ticker, contributing analyst, forecast period end, the original forecast activation date). Also, this file provides the exclusion date for each excluded forecast. The information on this file allows us to identify I/B/E/S' exclusion decision for each individual analyst forecast.

[10] We eliminate all the stopped individual analyst forecasts from the sample, because we are interested in I/B/E/S' selections of forecasts for the consensus calculation while in many cases analysts make the stop decisions. Analysts can place a "stop" on their own estimate if they no longer follow a company; however, exclusion decisions are all initiated by I/B/E/S. We obtain the stop information from the I/B/E/S "Stopped Estimate" file. Similar as the "Detail history – Excluded estimates" file, the "Stopped Estimate" file provides basic information and the stop date for each stopped forecast, which allows us to identify the stop decision for individual analyst forecasts.

for each stock before a quarterly earnings announcement, to provide a benchmark for its optimism and accuracy. Our sample consists of nearly 2.2 million individual analyst forecasts for 12,777 stocks. The sample period ranges from 1994 to 2015, because I/B/E/S detail history file was reconstructed in 1993.

To create control variables, we also merge the I/B/E/S detail history file with COMPUSTAT for financial data, and CRSP for stock return data. The number of observations might vary depending on data availability for each test. All continuous variables are winsorized at the 1st and 99th percentiles to mitigate the influence of extreme observations.

3.2 Descriptive statistics

In Figure 1, we compare the I/B/E/S consensus with the "detail file consensus" which is the simple average of the last forecast for each brokerage available on the detail file. For firms with no excluded forecasts, the I/B/E/S consensus and the detail file consensus are comparable in terms of both absolute value and signed value of forecast errors (see Figure 1(a) and (c)). However, for firms with excluded forecasts, the I/B/E/S consensus is more accurate and less optimistic than the detail file consensus (see Figure 1(b) and (d)). When we further separate the detail file forecasts into excluded forecasts and included forecasts for the same firm, we find the high forecast error and more optimism in the detail file consensus is mainly driven by those excluded forecasts. Thus, the evidence from the univariate analysis indicates that I/B/E/S tends to exclude analyst forecasts with large errors and more optimism. It is possible that forecasts with large errors happen to be more optimistic. As a result, exclusions of these forecasts will not only improve consensus accuracy but also reduce consensus optimism and thus these two factors cannot be distinguished

from each other in affecting I/B/E/S exclusion decisions. Our sequent multivariate analysis that includes both forecast accuracy and optimism in the model shed light on this issue.

In Panel A of Table 1, we present descriptive statistics for firm-quarters that have at least one forecast excluded by I/B/E/S. Around 16.3% of the forecasts issued by these firms are excluded by I/B/E/S. And, the excluded forecasts have much higher forecast errors and are more optimistic than those included by I/B/E/S. This initial evidence suggests that I/B/E/S tends to exclude inaccurate and optimistic forecasts.

In Panel B, we present the descriptive statistics for the variables used in our tests. As mentioned above, we constrain our sample to the last forecasts issued by each brokerage house for each stock before a quarterly earnings announcement, because these forecasts are most relevant to the calculation of I/B/E/S last consensus earnings estimates before a quarterly earnings announcement. Therefore, most of the analyst forecasts are fresh. Only 4.2% of the forecasts in our sample are not reviewed after a prior-period earnings announcement, while 4% are not updated for 105 days.

[Insert Table 1]

In Table 2, we present the correlation matrix between the variables used in our tests. The dummy variable *Exclusion* is positively correlated with absolute forecast error (*Abs_FE*) and forecast optimism (*Optimism*) at the significance level of 1%, indicating the excluded forecasts tend to be inaccurate and optimistic. Interestingly, the dummy variable *Exclusion* is positively correlated with *Actual>IBES consensus*, but negatively correlated with *Actual>Detail file consensus.* This provides some initial evidence that I/B/E/S excludes forecasts when firms will

report earnings below forecasts and the exclusion of these optimistic forecasts provides a lower benchmark, enabling firms to beat street earnings.

[Insert Table 2]

In figure 2, we provide evidence on the precise time within the quarter forecasts are most likely to be excluded. Our graph indicates a bimodal distribution, as forecasts are most likely to be excluded in the two week period following the prior EA or the two week period preceding the subsequent EA. Forecast exclusions that reduce the consensus are more common than those that increase the consensus during all periods within the quarter.

4 Research design and empirical results

4.1 Tests of the effect of accuracy (H1) and optimism (H2) on exclusions

In this section, we examine whether I/B/E/S deviates from its bright-line policies to exclude inaccurate (H1) and optimistic (H2) forecasts by regressing I/B/E/S exclusion decisions on absolute forecast errors (H1) and forecast optimism (H2). We include a series of controls for I/B/E/S guidelines, firm*year-quarter and analyst fixed effects. We estimate our regression using the following equation:

$$Exclusion_{i,j,t} = \beta_0 + \beta_1 * Abs\_FE_{i,j,t} + \beta_2 * Optimism_{i,j,t} + controls\ for\ IBES\ guidelines + \varepsilon_{i,j,t} \quad (1)$$

The dependent variable $Exclusion_{i,j,t}$ is an indicator variable equal to 1 if I/B/E/S excluded the forecast issued by analyst j for firm i's year-quarter t. Our first independent variable of interest $Abs\_FE_{i,j,t}$, is defined as the absolute difference between actual EPS and an analyst earnings forecast scaled by price. A positive coefficient on this variable suggests I/B/E/S systematically removes inaccurate forecasts consistent with the efficiency view (H1). Our second independent variable of interest $Optimism_{i,j,t,}$ is defined as an indicator variable equal to 1 if the forecast issued

by analyst *j* is greater than the actual EPS for firm *i*'s year-quarter *t*.[11] A positive coefficient on this variable suggests I/B/E/S systematically removes optimistic forecasts consistent with the opportunistic view (H2). We cluster standard errors at firm level.

Because we are interested in measuring I/B/E/S' discretion, we create five variables to capture I/B/E/S bright-line policies related to the staleness of the forecast. The variable *Dummy(Review date < Prior EA)*, defined as whether the review date of a forecast is before a prior-period earnings announcement, captures the rule that I/B/E/S excludes forecasts that have not been reviewed after a prior-period earnings announcement. The variable *(EA – Review date) > 105 days*, defined as whether days between the review date and current earnings announcement date exceed 105 days, captures the rule that a forecast has not been reviewed for more than 105 days should be excluded. We include the variable *(EA – Forecast ann. date) > 180 days*, to capture the policy that even if reviewed, sufficiently stale forecasts need to be revised or they will be excluded. Finally, one possibility is that I/B/E/S/ does not enforce its bright line policies uniformly, but does so more frequently for more stale forecasts. As a result, to capture the spirit of the policy that old forecasts should be used less frequently to calculate the consensus, we also include a rank of the time since the prior EA that the forecast has not been reviewed *Rank(Review date – Prior EA)* and the length of time between the review and the forecast announcement *Rank(Review date – Forecast ann. date)*. The inclusion of our extensive set of controls for forecast staleness, ensures our variables of interest capture variation in accuracy and optimism orthogonal to staleness.

[11] We also use an alternative measure to capture forecast optimism. Specifically, we code *Optimismi,j,t* equal to 1 if the exclusion of forecast issued by analyst j for firm i's year-quarter t would reduce the consensus, zero otherwise. Our results hold for this alternative measure of forecast optimism. The results are untabulated.

Column (1) of Table 3 reports the results estimated from equation (1). Consistent with our prediction in Hypothesis 1, we find a positive and significant association between $Exclusion_{i,j,t}$ and $Abs\_FE_{i,j,t}$, suggesting that I/B/E/S deviates from its bright-line policies to exclude inaccurate forecasts. The coefficient estimates suggest that increasing $Abs\_FE_{i,j,t}$ by one standard deviation increases the probability of exclusion by over 5%. We also find a highly significant coefficient on our optimism dummy (2.8%), suggesting issuing a forecast above subsequently reported earnings increases the probability of exclusion. We note that these analyses include firm*year-quarter fixed effects, which allows us to hold constant reported earnings, while estimating the effect of variation in the forecasts accuracy and optimism on the probability of exclusion.

4.2 Controls for accounting basis

One concern with this analysis is that time-varying changes in the complexity of forecasting earnings can affect the accuracy and/or optimism of forecasts, while influencing the probability of an analyst forecasting a different number than competing analysts. Under such a scenario, I/B/E/S would systematically remove inaccurate and/or optimistic forecasts, but do so because of the non-discretionary "majority basis" policy.[12] We use two methods to address this concern.

4.2.1 Instrumenting for earnings forecast properties using sales forecast properties

In our first approach to identify exclusions related to discretion, we instrument earnings forecast errors (earnings forecast optimism) with sales forecast error (sales forecast optimism) issued by the same analyst on the same date. We begin by deleting all earnings forecasts with an excluded sales forecast, which ensures (under the hypothesis that majority basis exclusions explains the significant association between exclusions and both forecast error and optimism)

[12] As mentioned before, one of I/B/E/S bright-line policies is that I/B/E/S exclude forecasts that are on a different accounting basis, compared to the majority basis used by other analysts.

analysts revenue forecasts use the majority accounting basis. Using the accuracy (optimism) of sales forecasts as an instrument, we isolate the variation in the accuracy (optimism) of earnings forecasts driven by the revenue component, which use the "majority basis." Our identification assumption is that variation in the accuracy (optimism) of sales forecasts is correlated with the accuracy (optimism) of the revenue component in the earnings forecasts, but orthogonal to the variation driven by incorporating different expense items in the EPS forecast.

Column (2) to (4) of Table 3 report the results estimating from the 2SLS regression analysis. In the first-stage regression, we regress the accuracy (optimism) of earnings forecasts on the accuracy (optimism) of sales forecasts. Column (2) of Table 3 shows that the instrument variable *Abs(Sales forecast error)*$_{i,j,t}$ is significant and positively associated with the *Abs_FE*$_{i,j,t}$ (t-statistic = 18.01). Column (3) of Table 3 shows that the instrument variable *Optimistic sales forecasts*$_{i,j,t}$ is significant and positively associated with the *Optimism*$_{i,j,t}$ (t-statistic = 56.21). The weak identification test suggests that these instruments are relevant and powerful: the Kleibergen-Paap rk Wald F statistic is 192.86, significantly higher than the critical value of 10. In the second-stage regression, we use the predicted earnings forecast errors (*Abs_FE_Instrumented*$_{i,j,t}$) and predicted earnings forecast optimism (*Optimism_Instrumented*$_{i,j,t}$) to explain I/B/E/S exclusion decisions. Column (4) of Table 3 shows that *Abs_FE_Instrumented*$_{i,j,t}$ and *Optimism_Instrumented*$_{i,j,t}$ are loaded positively and statistically significant at the 1% level. These results suggest that the positive association between forecast errors (forecast optimism) and the probability of exclusion cannot be explained by I/B/E/S bright-line policies, including the "majority basis" policy.

In addition, all of the analyses in Table 3 include analyst fixed effects. The within analyst estimations further rule out the alternative explanation that our results are attributable to poor

analysts issuing inaccurate forecasts and estimating costs using a non-majority basis. Overall, our results in Table 3 support our Hypothesis 1 and Hypothesis 2, suggesting that I/B/E/S uses discretion to exclude inaccurate and optimistic forecasts. And, the results are not driven by any I/B/E/S bright-line policies (including the "majority basis" policy), any events at firm-year-quarter level and analyst characteristics.

[Insert Table 3]

4.2.2 Directly controlling for the "majority basis"

When analysts use a different accounting basis to calculate earnings, they not only do so for forward looking forecasts but also for the reporting of actuals. In this section, we implement a procedure designed by Brown and Larocque (2013) to identify the actual Q1 earnings the firm reported according to the analysts operating model. After controlling for within firm-quarter variation in Q1 actual earnings, we examine whether our variables of interest explain Q1 forecast exclusions.

Specifically, we select all Q1 forecasts that are issued after the release of FY_{t-1} earnings but before the release of $Q1_t$ earnings. We then require the same analyst issue earnings forecasts for $Q2_t$, $Q3_t$, $Q4_t$, and FY_t on the same day, after the firm's release of $Q1_t$ earnings and before the release of $Q2_t$ earnings. We then subtract the sum of $Q2_t$, $Q3_t$ and $Q4_t$, from FY_t to compute each analyst's actual Q1 EPS. A difference between the analyst's inferred actual Q1 EPS and the actual I/B/E/S EPS indicates the Q1 earnings forecasts issued by this analyst is estimated on a "non-majority" accounting basis. We note that only 68,902 of our roughly 2.2 million observations satisfy these sample selection criteria.

We create two variables to capture those Q1 forecasts that are estimated based on "non-majority" accounting basis. $Diff\_dummy_{i,j,t}$ is an indicator variable equal to 1 if the absolute difference between the I/B/E/S actual and the analyst's inferred actual is at least one penny. $Diff\_continuous_{i,j,t}$ is measured as the absolute difference between the I/B/E/S actual and the analyst's inferred actual. We modify equation (1) to include these controls and also remove staleness variables that are not applicable (i.e. all Q1 forecasts are issued after the prior quarter's EA, so no forecasts will be stale under any I/B/E/S policy):

$$\begin{aligned} Exclusion_{i,j,t} = {} & \beta_0 + \beta_1 * Abs\_FE_{i,j,t} + \beta_2 * Optimism_{i,j,t} \\ & + \beta_3 * Diff\_dummy_{i,j,t} + \beta_4 * Diff\_continuous_{i,j,t} \\ & + controls\ for\ other\ IBES\ guidelines + \varepsilon_{i,j,t} \end{aligned} \quad (2)$$

Column (1) of Table 4 reports the results estimating from equation (2). We find highly significant coefficients for $Abs\_FE_{i,j,t}$ and $Optimism_{i,j,t}$ suggesting the accounting basis cannot explain our findings. In column (2), we exclude those forecasts with $Diff\_dummy_{i,j,t}$ taking value of 1. We find that even within the sample using the majority basis, I/B/E/S/ systematically excludes inaccurate and optimistic forecasts. Note that the sample in column (2) is only 41% of the sample in column (1). This provides a very practical explanation for the selective enforcement of the majority basis rules, strict enforcement would leave few forecasts with which to calculate a consensus.

In column (3) of Table 4, we investigate whether forecasts that are estimated based on "non-majority" accounting basis are systematically positive. We show that $Diff\_dummy_{i,j,t}$ is not associated with $Signed\_FE_{i,j,t}$, which is measured as the signed difference between analyst forecast and actual EPS. The lack of systematic optimism suggests "majority basis" is not a correlated omitted variable in Table 2. In untabulated analysis we find that $Diff\_dummy_{i,j,t}$ is significantly

correlated with absolute value of forecast errors, consistent with the main findings in Brown and Larocque (2013).

[Insert Table 4]

4.3 Do firm managers influence exclusions?

To strengthen our argument that firm managers influence the exclusion of optimistic forecasts, we examine whether the probability of excluding optimistic forecasts increase (1) when the forecast has immediate influence on the firm's ability to meet or beat (see Section 4.3.2), (2) when firm managers have stronger incentives to meet or beat the earnings benchmark (see Section 4.3.3), and (3) when I/B/E/S relies more on information from firm managers (see Section 4.3.2).

4.3.1 Inter-temporal tests

To strengthen the argument that firm managers influence the exclusion process, we examine whether the probability of excluding optimistic forecasts increases when the forecast has an immediate influence on the firm's ability to meet or beat I/B/E/S consensus. Ke and Yu (2006) suggest that managers prefer pessimistic short horizon forecasts and optimistic long-horizon forecasts, because short-horizon forecasts have an immediate influence on firms' ability to meet or beat consensus forecasts, while long-horizon optimistic forecasts help promote the firm in the capital market. So we predict that if managers influence exclusions, quarterly optimistic forecasts are more likely to be excluded, compared to those annual forecasts issued by the same analyst on the same day.

To conduct this analysis, we merge in the annual forecast issued by the same analyst on the same day as each forecast in our sample. We exclude Q4 forecasts, because at the end of the fiscal year the annual and quarterly forecasts have identical horizons.

We run the following regression model:

$$
\begin{aligned}
Exclusion_{i,j,t} = {} & \beta_0 + \beta_1 * Optimism_{i,j,t} * Dummy(Qtrly\ \ forecast)_{i,t} \\
& + \beta_2 * Optimism_{i,j,t} + \beta_3 * Dummy(Qtrly\ \ forecast)_{i,t} \\
& + \beta_4 * Abs\_FE_{i,j,t} + controls\ for\ IBES\ guidelines + \varepsilon_{i,j,t}
\end{aligned} \tag{3}
$$

The dependent variable $Exclusion_{i,j,t}$ is an indicator variable equal to 1 if I/B/E/S excluded the forecast issued by analyst j for firm i's year-quarter t. Our main independent variable of interest $Optimism_{i,j,t} * Dummy(Qtrly\ \ forecast)_{i,t}$, where $Dummy(Qtrly\ \ forecast)_{i,t}$ is a dummy variable equal to 1 if the forecast period end is current quarter end, and equal to 0 if the forecast period is current fiscal year end. Consistent with the main test, we include a series of controls for I/B/E/S guidelines to isolate the component of exclusion decisions that is driven by I/B/E/S discretion. We cluster standard errors at the firm level.

Table 5 reports the results estimated from equation (3). In column (1), the main variable of interest $Optimism_{i,j,t} * Dummy(Qtrly\ forecast)_{i,t}$ is loaded positively and statistically significant at the 1% level. In column (2), we use firm*year-quarter fixed effects. The results are consistent with those in column (1), indicating that within a firm-quarter, optimistic forecasts for the current quarter are more likely to be excluded. In column (3), we use firm*year-quarter and analyst fixed effects, the coefficient on the interaction term becomes significant at the 10% level but still has a sign consistent with our prediction. Collectively, these results suggest that firm managers are more likely to guide I/B/E/S to exclude short-horizon forecasts that have an immediate influence on the firm's ability to meet or beat I/B/E/S consensus. This analysis also helps to address any residual concern that our results arise because of a systematic preference on the part of I/B/E/S for more pessimistic forecasts.

[Insert Table 5]

4.3.2 Cross-sectional tests

In this section, we conduct two sets of cross-sectional tests to further support our argument that firm managers influence the process of excluding forecasts from consensus calculation.

First, we predict that I/B/E/S is more likely to exclude optimistic forecasts when firm managers have stronger incentives to meet or beat I/B/E/S consensus. Prior studies suggest that the capital market rewards firms that consecutively meet or beat consensus earnings estimates (i.e., Barth, Elliott and Finn 1999). We expect a firm manager has stronger incentives to meet or beat the current quarter consensus earnings when the firm has a higher probability of meeting or beating consensus earnings in the prior years. So we create the variable *Previous* $MB_{i,t}$, defined as the average probability of meeting or beating consensus earnings in the past 5 years, to capture firm mangers' incentives to meet or beat consensus earnings for the current quarter. We estimate our regression using the following model:

$$\begin{aligned} Exclusion_{i,j,t} = {} & \beta_0 + \beta_1 * Optimism_{i,j,t} \\ & + \beta_2 * Optimism_{i,j,t} * Previous\,MB_{i,t} + \beta_3 * Previous\,MB_{i,t} \\ & + \beta_4 * Abs\_FE_{i,j,t} + controls\ for\ IBES\ guidelines + \varepsilon_{i,j,t} \end{aligned} \quad (4)$$

Column (1) of Table 6 reports the results estimated from equation (4). We find that the main independent variable of interest *Optimism*$_{i,j,t}$ * *Previous* $MB_{i,t}$ is loaded positively and statistically significant at the 1% level, after controlling for forecast accuracy, I/B/E/S bright-line policies, frim* year-quarter and analyst fixed effects. The results provide support to the opportunism view that I/B/E/S is more likely to exclude optimistic forecasts when the firm managers have higher incentives to meet or beat consensus earnings forecasts.

Second, we predict that I/B/E/S might have a stronger incentive to engage in opportunistic exclusion if the benefits from accessing firms' private information are greater than the costs associated with exclusions. Specifically, we expect I/B/E/S relies more on firms' private

information and is more likely to follow managers' suggestions to exclude optimistic forecasts, when the firm has a greater level of information asymmetry. Following prior studies, we use three variables to capture the level of information asymmetry for each firm, including *std(stock returns)*$_{i,t}$, *median(bid-ask spread)*$_{i,t}$, and *forecast dispersion*$_{i,t}$. We estimate our regression using the following model:

$$\begin{aligned} Exclusion_{i,j,t} = {} & \beta_0 + \beta_1 * Optimism_{i,j,t} * Information\ asymmetry_{i,t} \\ & + \beta_2 * Optimism_{i,j,t} + \beta_3 * Information\ asymmetry_{i,t} \\ & + \beta_4 * Abs\_FE_{i,j,t} + controls\ for\ IBES\ guidelines + \varepsilon_{i,j,t} \end{aligned} \quad (5)$$

Column (2) to (4) in Table 6 report the results estimated from equation (5). In column (2) to column (4), we run the same regression specifications except using three different measures for information asymmetry. Consistent with our prediction, we find that I/B/E/S is more likely to exclude optimistic forecasts when the firm information asymmetry is higher.

In addition, we include firm*year-quarter and analyst fixed effects for all analyses in Table 6. The within firm-quarter estimation rules out any firm-quarter specific event. The within analyst estimation further ensure our results are not driven by any analyst characteristic.

[Insert Table 6]

4.4 Price formation and forecast exclusions

In our next set of analyses, we examine the effect of forecast exclusions on price formation at the time the analyst issues the forecast, at the time I/B/E/S/ issues the exclusion and subsequent to the exclusion. Following the information in excluded forecasts over time allows us to understand whether forecast exclusions produce information and whether the market efficiently processes the information.

4.4.1 Market reactions to the analysts' revision of excluded and unexcluded forecasts

To strengthen the argument that I/B/E/S uses private information from firm managers rather than relying on public information, we examine whether investors can differentiate forecasts subsequently excluded from those included in the consensus calculation, at the time these forecasts are initially issued. We delete those forecasts are excluded within 2 days after the issuance because for these forecasts the market reaction to I/B/E/S/' decisioin to exclude the forecast cannot be separated from the reaction to the forecast revision itself. Following Hugon and Muslu (2010), we run the following regression model:

$$\begin{aligned} Abnormal\ \ ret\ around\ the\ \ forecast\ issuance\ date_{i,j,t} \\ = \beta_0 + \beta_1 * REV_{i,j,t} * Exclusion_{i,j,t} \\ + \beta_2 * REV_{i,j,t} + \beta_3 * Exclusion_{i,j,t} \\ + controls + REV_{i,j,t} * controls + \varepsilon_{i,j,t} \end{aligned} \quad (6)$$

The dependent variable is *Abnormal ret around the forecast issuance date*$_{i,j,t}$, defined as the 5-day abnormal returns around the forecast issuance date. The variable of interest is $REV_{i,j,t}$ **Dummy(exclusion)*$_{i,j,t}$, which captures the incremental market reaction to the forecasts that are later on excluded by I/B/E/S. $REV_{i,j,t}$ is defined as the difference between an analyst *j*'s forecast and the average of other forecasts available to the market before analyst *j* issues the forecast scaled by the nearest preceding monthly stock price. We include control variables following Hugon and Muslu (2010).

Panel A of Table 7 reports the descriptive statistics for variables used in this analysis. Panel B of Table 7 reports the results estimated from equation (6). The coefficient on $REV_{i,j,t}$ **Dummy(exclusion)*$_{i,j,t}$ is loaded positively and significant at the 1% level. We interpret this coefficient as consistent with investors reacting to subsequently excluded forecasts, to a similar or greater extent as included forecasts. The significant incremental market reaction to excluded

forecasts makes it more plausible that I/B/E/S/ produces information when subsequently deciding to exclude the forecast, because the market updated in response to the initial forecast.

[Insert Table 7]

4.4.2 Market reaction to the I/B/E/S/ exclusion

In this section, we examine markets reaction to exclusions to test whether investors update expectations of future earnings in response to exclusions. Specifically, we calculate our variable of interest is *Consensus revision*, which provides a measure of the change in consensus I/B/E/S/ caused by the exclusion of the forecast. We define the variable as the difference between the average of forecasts on the detail file after the exclusion (*Consensus after exclusion*) and the average of forecasts on the detail file before removing the excluded forecast (*Consensus before exclusion*).[13] The hypothesis that I/B/E/S/ produces information about future earnings predicts a positive association between consensus revision and event date returns. We measure event date returns, *Abnormal return around the event date*$_{i,j,t}$,, as the 5-day abnormal return around the event date. In addition, several exclusions in our sample are clustered in event time. We combine exclusion announcements together if there are less than four days between the announcements.[14] Specifically, we estimate the regression by running the following model:

[13] We use the detail file to calculate the revision to the consensus because the monthly updates to the consensus file available from I/B/E/S/ through WRDS are not timely enough to allow us to construct variables using the consensus file. The consensus and detail files do not articulate precisely because some brokerages decline to publish forecasts on the detail file, but do publish on the consensus file.

[14] Our results do not change if we separate these exclusion actions.

$$
\begin{aligned}
\textit{Abnormal return around the event date}_{i,j,t} = {} & \beta_0 + \beta_1 * \textit{Consensus revision}_{i,j,t} \\
& + \beta_2 * BTM_{i,t} + \beta_3 * ROA_{i,t} \\
& + \beta_4 * \textit{Asset growth rate}_{i,t} \\
& + \beta_5 * Log(MVE_{i,t}) \\
& + \beta_6 * \textit{Abnormal ret\_event date}(-30,-3)_{i,t} \\
& + \varepsilon_{i,t}
\end{aligned}
\tag{7}
$$

Panel A of Table 8 reports the descriptive statistics for the variables used in this analysis. The mean market-adjusted forecast exclusion announcement return is -0.7%, which is significantly less than zero, suggesting exclusion announcements predominantly produce negative news. This is consistent with I/B/E/S consensus revision on average being negative (-0.001) and the excluded forecasts are more optimistic than the included forecasts (Figure 1(d). Examining long-window returns from the exclusion date to the EA date, we see no significant reversal or continuation.

Panel B of Table 8 reports the results estimated from equation (7), where we use variation in the consensus revision caused by the exclusion to test if markets update in response to exclusion events. In column (1), we show that *Consensus revision* has a positive and significant coefficient, suggesting that investors react strongly to I/B/E/S consensus revisions induced by forecast exclusions (t=7.17). Thus, stock markets revise earnings expectations in accordance with I/B/E/S' revisions to consensus earnings.

Next, we examine post-exclusion announcement returns to test if exclusion-induced I/B/E/S consensus revisions are informative about future earnings. If exclusions do not contain information about future earnings, we would expect the announcement returns to reverse before the subsequent earnings announcement. Alternatively, if I/B/E/S produces information via exclusions, we would expect no reversal or perhaps even a mild continuation if investors underreact to consensus revisions in the short window. Examining post-announcement returns we

find significant continuations in returns over both the remainder of the quarter (i.e. [Exclusion date + 3, EA date – 3]) and at the EA (i.e. [EA – 2, EA + 2]). Overall, our analysis suggests that I/B/E/S forecast exclusions move market earnings expectations and improve price efficiency.

5 Conclusion

In this study we examine the incentives involved in the process of aggregating individual analyst forecasts into consensus forecasts by I/B/E/S. We find that both forecast accuracy and optimism affects I/B/E/S' forecast exclusion decisions and these two factors are incremental to each other in explaining the variation of exclusions. These findings are robust to the use of extensive controls for the staleness of forecasts and firm-quarter fixed effects which capture within-firm time-varying firm fundamentals, to an instrumental variable approach where we exploit variation in accuracy and optimism related to revenue forecasts, and to a subset of firms where we can observe the accounting basis used to calculate actual earnings (Brown and Larocque 2013).

To test whether firm managers' preference influences I/B/E/S' forecast exclusions, we show the exclusion of optimistic forecasts occurs more frequently for short-horizon forecasts and for firms that have frequently beaten expectations in the past, situations where managers have stronger incentives to meet or beat. We also find optimistic exclusions are more frequent when information asymmetry is greater, consistent with a weaker information environment leading I/B/E/S to rely more on information from firm managers, resulting in downward pressure on the consensus.

Finally, we examine market reaction to forecast exclusions in both short and long window. We find that stock market reacts to exclusion-related consensus revisions in the short window and

the reaction does not reverse over time. Thus, forecast exclusions affect market earnings expectations and improve stock price efficiency.

Overall, the takeaway from our study has three folds: 1) I/B/E/S exclusion procedures improve consensus accuracy; 2) I/B/E/S' exclusions also improve managers' ability to meet or beat the street earnings; 3) I/B/E/S exclusions improves stock price efficiency.

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Appendix A: Variable definitions

Variable Label	Definition
Dependent Variables:	
Exclusion	An indicator variable that is equal to 1 if the forecast is excluded by I/B/E/S.
Actual>I/B/E/S consensus	An indicator variable that is equal to 1 if the actual EPS is greater than or equal to I/B/E/S consensus.
Actual>Detail file consensus	An indicator variable that is equal to 1 if the actual EPS is greater than or equal to detail file consensus. Here, detail file consensus is defined as the average value of all the last forecasts issued by analysts before a quarterly earnings announcement on the detail file.
Abnormal Return-EA[-2,2]	5-day cumulative abnormal return around an earnings announcement.
Abnormal Return-forecast issuance[-2,2]	5-day cumulative abnormal return around a forecast issuance date.
Abnormal Return-Exclusion date[-2,2]	5-day cumulative abnormal return around an exclusion date
Abnormal Return-[Exclusion date +3, EA date – 3]	Cumulative abnormal returns during the period between 3 days after exclusion date and 3 days before EA date
Independent variables:	
Abs_FE	The absolute value of the difference between actual EPS and an analyst forecast.
Optimism	An indicator variable that is equal to 1 if the analyst forecast is greater than actual EPS.
Abs_FE_Instrumented	The predicted value of absolute forecast accuracy of EPS forecasts estimated from the first stage of the IV regression.
Optimism_Instrumented	The predicted optimism of EPS forecasts estimated from the first stage of the IV regression
Abs(sales forecast error)	The absolute value of the difference between actual Sales forecast and an analyst forecast.
Optimistic sales forecast	An indicator variable that is equal to 1 if the analyst forecast is greater than actual sales forecast.
Consensus revision	Changes in consensus due to the exclusion action
Actual – Avg(excluded forecasts)	The difference between actual EPS and the average value of excluded forecasts.
Variables for the inter-temporal and cross-sectional tests:	
Dummy(Qtrly forecast)	An indicator variable that is equal to if the forecast is issued for the current quarter.
Previous MB	The percentage of meeting or beating I/B/E/S consensus in the past 5 years.
Std(stock returns)	The standard deviation of the monthly stock returns in the past 3 years.
Median(bid-ask spread)	The median of the monthly bid-ask spreads in the past year
Forecast dispersion	The standard deviation of all the forecasts for a given firm quarter.
Control variables for I/B/E/S guidelines:	
Review date – Prior EA	The number of days between review date and a prior-period earnings announcement. This variable is transformed to percentile ranks that range from 0 to 1 in the regression analyses.
Review date – Forecast ann. date	The number of days between review date and forecast announcement date. This variable is transformed to percentile ranks that range from 0 to 1 in the regression analyses.
Dummy(Review date<Prior EA)	An indicator variable that is equal to 1 if review date is before a prior-period earnings announcement.

Variable Label	Definition
Mgmt. guidance	An indicator variable that is equal to 1 if the firm issues at lease one management guidance for a given quarter.
(EA-Review date)>105 days	An indicator variable that is equal to 1 if the days between a current-period earnings announcement and review date are greater than 105.
(EA-Forecast ann. date)>180 days	An indicator variable that is equal to 1 if the days between a current-period earnings announcement and forecast announcement date are greater than 180.
Forecast-level control variables:	
REV	The difference between an analyst j forecast and the average of forecasts available at the time analyst j issues the forecast scaled by stock price. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
AWARD	An indicator variable that is equal to one if the analyst finished first, second, third or honorable mention in the Institutional Investor all-star rankins, zero otherwise.
BSIZE	Brokerage house size, calculated as the natural logarithm of the number of analysts employed by an brokerage house. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
GEXP	Number of years since an analyst first appeared on I/B/E/S. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
FREQ	Number of earnings forecasts made by an analyst during year t. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
AVABSFE	Average of absolute difference between actual EPS and forecasts issued by an analyst during year t deflated by stock price. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
AVFE	Average of the difference between actual EPS and forecasts issued by an analyst during year t deflated by stock price. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
Firm-level control variables:	
Loss	An indicator variable that is equal to 1 if the firm has negative actual earnings at t-1.
ROA	Total revenue minus the sum of cost of goods sold, SG&A, R&D, and interest expense scaled by common equity minus preferred stock. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
Asset growth rate	Current year total assets minus prior year total assets scaled by prior year assets. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
BTM	Common equity minus preferred stock divided by size variable. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
MVE	Share Price multiplied by the number of shares outstanding. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
Abnormal Return-EA[-30,-3]	The pre-earnings announcement return. Calculated from 30 trading days to 3 trading days before the earnings announcement. In the stock

Variable Label	Definition
	return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.
Abnormal Return-Exclusion date[-30,-3]	The pre-earnings announcement return. Calculated from 30 trading days to 3 trading days before each exclusion date. In the stock return tests, this variable is transformed to percentile ranks that range from -0.5 to 0.5.

Figure 1 Compare I/B/E/S consensus versus detail file consensus

In Figure 1(a) and (c), we compare the absolute value and signed value of forecast errors of I/B/E/S consensus versus detail file consensus for firm-quarters that have no forecast excluded, respectively. Consensus error is measured as either the absolute or signed difference between actual EPS and I/B/E/S consensus scaled by price. Detail file forecast consensus is measured as either the absolute or signed difference between actual EPS and the average of all the forecasts on detail file scaled by price. In Figure 1(b) and (d), we compare the absolute value and signed value of I/B/E/S consensus versus detail file consensus for firm-quarters that have at least one forecast excluded, respectively. Consensus error and detail file forecast error are defined same as those in Figure1(a) and (c). Excluded forecast error is measured as either the absolute or signed difference between actual EPS and the average of all the excluded forecasts scaled by price. Included forecasts error is measure as either the absolute or signed difference between actual EPS and the average of all the detail file forecasts included in the consensus calculate scaled by price.

Figure 1(a) Firm-quarters that have no forecasts excluded – abs(forecast error) scaled by price

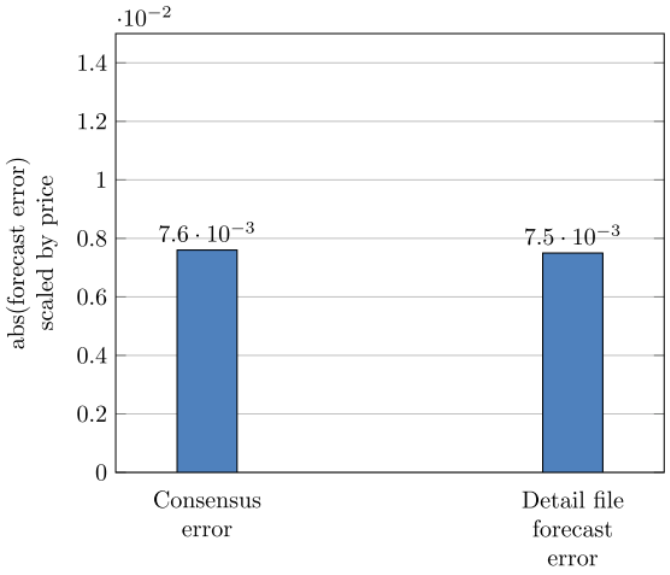

Figure 1(b) Firm-quarters that have at least one forecasts excluded – abs(forecast error) scaled by price

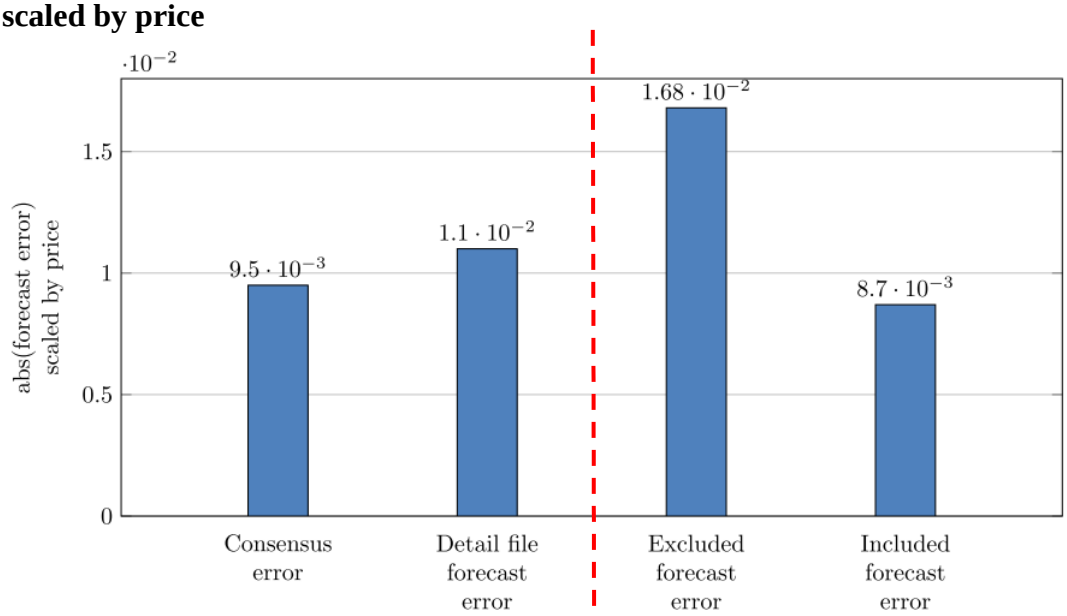

Figure 1 (Continued)

Figure 1(c) Firm-quarters that have no forecasts excluded – signed(forecast error) scaled by price

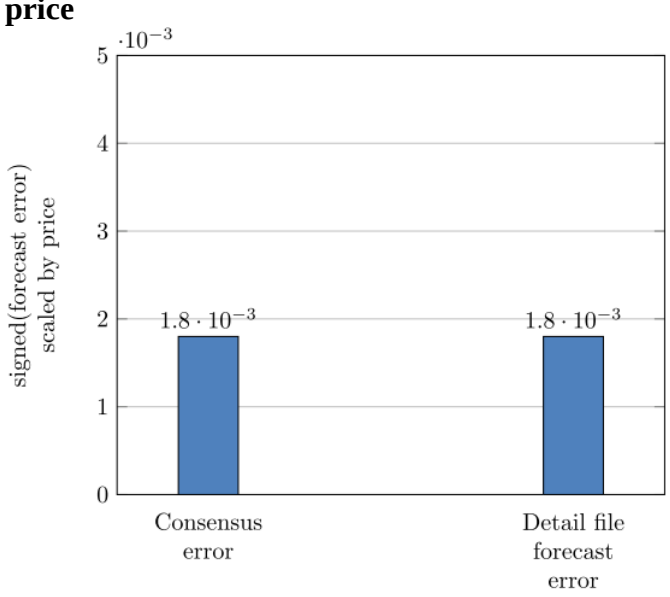

Figure 1(d) Firm-quarters that have at least one forecasts excluded – signed(forecast error) scaled by price

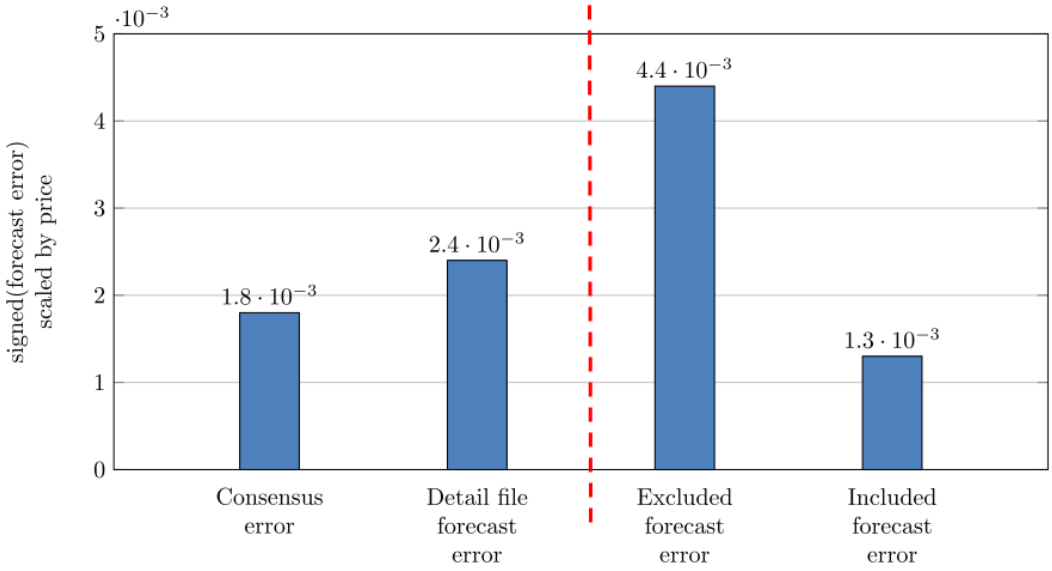

Figure 2 Time trend of exclusion actions

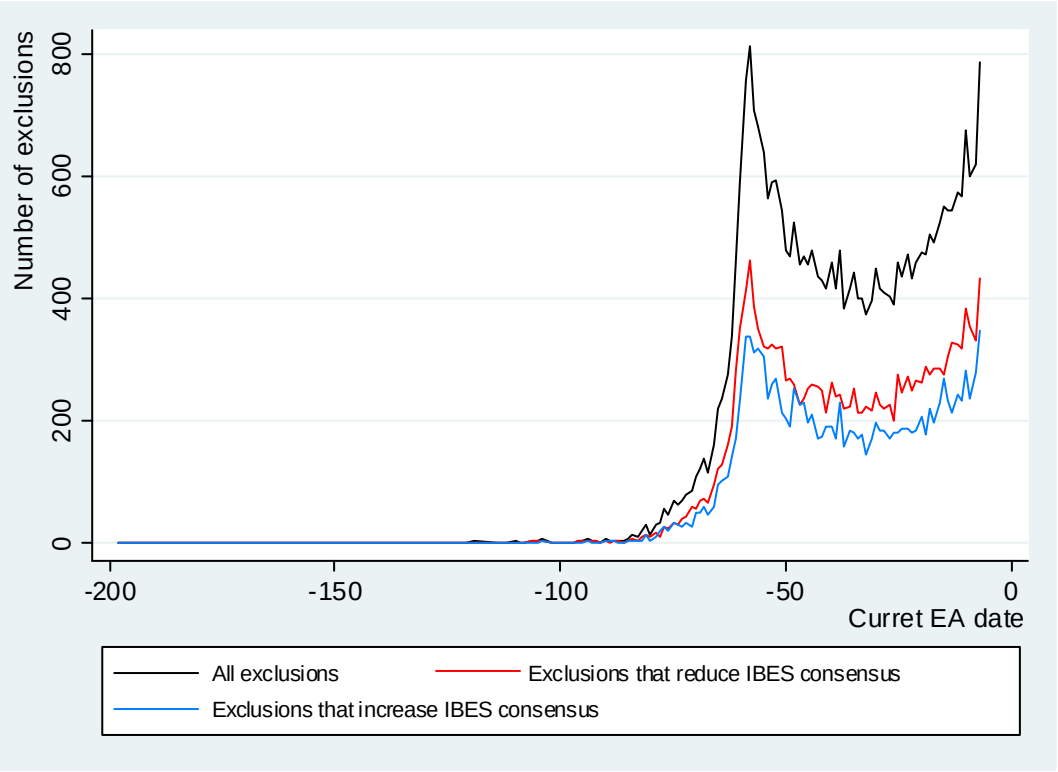

Figure 1 in Panel B of Table 8 plots days between the exclusion date and current EA date over a 200-day period. Y axis represents the number of exclusions. X axis represents the *t* days before current EA date, where *t* ranges from 0 to 200.

Table 1 Descriptive Statistics

Panel A Descriptive statistics for firm-quarters that have forecasts excluded

Variables	Excluded forecasts	Included forecasts	Difference in Means	Std.Err.
Percentage of total forecasts	0.163	0.837	NA	NA
Abs_FE	0.012	0.005	0.007***	(0.000)
Optimism	0.493	0.296	0.196***	(0.001)

Panel B Descriptive statistics for the variables in the main analyses

Variables	N	Mean	Std. dev.	Q1	Median	Q3
Exclusion	2,228,946	0.063	0.245	0	0	0
Actual > I/B/E/S consensus	278,798	0.647	0.477	0	1	1
Actual > Detail file consensus	278,798	0.588	0.492	0	1	1
Independent variables:						
Abs_FE for the OLS regression	2,228,946	0.005	0.012	0.000	0.001	0.004
Abs_FE for the 2SLS regression	810,637	0.004	0.011	0.001	0.001	0.004
Abs(Sales forecast error)	810,637	0.012	0.028	0.001	0.004	0.011
Optimism for the OLS regression	2,228,946	0.318	0.466	0	0	1
Optimism for the 2SLS regression	810,637	0.300	0.458	0	0	1
Optimistic sales forecasts	810,637	0.410	0.491	0	0	1
Variables for cross-sectional tests:						
Previous MB	2,228,946	0.580	0.220	0.428	0.571	0.736
Std(stock returns)	1,481,583	0.025	0.014	0.015	0.022	0.032
Median(bid-ask spread)	1,481,583	-0.105	0.166	-0.125	-0.020	-0.010
Forecast dispersion	1,481,583	0.042	0.064	0.009	0.020	0.047
Control variables for I/B/E/S guidelines:						
Dummy(Review date < Prior EA)	2,228,946	0.042	0.200	0	0	0
Mgmt. guidance	2,228,946	0.217	0.412	0	0	1
(EA - Review date) > 105 days	2,228,946	0.040	0.196	0	0	0
(EA - Forecast ann. date) > 180 days	2,228,946	0.087	0.282	0	0	0
Review date - Prior EA	2,228,946	101	99.77	48	82	104
Review date - Forecast ann. date	2,228,946	92	106.58	3	57	152

This table reports descriptive statistics for the variables used in our analyses. All variables are defined in the Appendix A.

Table 2 Correlation matrix

	Exclusion	Abs_FE	Optimism	Actual >IBES consensus	Actual >Detail file consensus	Previous MB	Std (stock returns)	Median (bid-ask spread)	Forecast dispersion	ROA	BTM	Log (MVE)	Asset growth rate
Forecast characteristics:													
Exclusion		**0.158**	**0.097**	**-0.027**	**-0.040**	**-0.005**	**0.041**	**0.043**	**0.012**	**-0.070**	**-0.016**	**0.010**	**-0.006**
Abs_FE	**0.153**		**0.245**	**-0.173**	**-0.073**	**-0.114**	**0.195**	**0.106**	**0.174**	**-0.158**	**0.235**	**-0.246**	**-0.140**
Optimism	**0.097**	**0.187**		**-0.649**	**-0.645**	**-0.168**	**0.057**	0.004[b]	**0.054**	**-0.051**	**0.040**	**-0.095**	**0.001**
Firm characteristics:													
Actual>IBES consensus	**0.005**	**-0.174**	**-0.649**		**0.766**	**0.200**	**-0.067**	-0.003[b]	**-0.054**	**0.069**	**-0.072**	**0.136**	**0.004**
Actual>Detail file consensus	**-0.040**	**-0.134**	**-0.645**	**0.766**		**0.196**	**-0.071**	-0.001[b]	**-0.044**	**0.068**	**-0.039**	**0.136**	**-0.017**
Previous MB	**0.001**	**-0.011**	**-0.169**	**0.202**	**0.197**		**-0.092**	**-0.104**	0.005[a]	**0.135**	**-0.117**	**0.221**	**0.092**
Std(stock returns)	**0.037**	**0.015**	**0.036**	**-0.052**	**-0.047**	**-0.042**		**0.158**	**0.024**	**-0.244**	**-0.059**	**-0.414**	**0.066**
Median(bid-ask spread)	**0.029**	**0.093**	**0.007**	**-0.004**	**-0.072**	**-0.072**	**0.104**		**-0.008**	**-0.132**	**0.070**	**-0.018**	**-0.121**
Forecast dispersion	**0.057**	**0.032**	**0.022**	**-0.035**	**-0.008**	**0.060**	**-0.027**	**-0.089**		**-0.019**	**0.045**	**0.076**	**0.028**
ROA	**-0.029**	**-0.097**	**-0.037**	**0.051**	**0.051**	**0.089**	**-0.168**	**-0.080**	**-0.025**		**-0.221**	**0.199**	**0.045**
BTM	**-0.009**	**0.205**	**0.044**	**-0.073**	**-0.048**	**-0.111**	**0.012**	**0.077**	**0.043**	**-0.062**		**-0.165**	**-0.187**
Log(MVE)	**0.011**	**-0.199**	**-0.096**	**0.136**	**0.137**	**0.217**	**-0.411**	**-0.016**	**0.073**	**0.136**	**-0.185**		**-0.014**
Asset growth rate	0.003[b]	**-0.058**	**0.013**	**-0.014**	**-0.027**	**0.035**	**0.419**	**-0.048**	**0.029**	**-0.050**	**-0.106**	**-0.052**	

Table 2 presents the correlations between the variables used in our analyses. Pearson correlations are below the diagonal. Spearman correlations are above the diagonal. Bold indicates significance at the 1% level. [a] indicates significance level at 5% level. [b] indicates significance level worse than 10%. Appendix A contains detailed variable definitions.

Table 3 Whether I/B/E/S uses discretion to exclude inaccurate and optimistic forecasts

	– OLS –	– 2SLS –		
		First stage	First stage	Second stage
	DV= ***Exclusion*** (1)	DV= ***Abs_FE*** (2)	DV= ***Optimism*** (3)	DV= ***Exclusion*** (4)
Abs_FE	**4.830*** (43.62)**			
Optimism	**0.028*** (26.26)**			
Abs_FE_Instrumented				**6.716*** (8.92)**
Optimism_Instrumented				**0.045*** (6.53)**
Abs(Sales forecast error)		**0.035*** (18.01)**	0.369*** (9.09)	
Optimistic Sales forecasts		0.000 (1.10)	**0.105*** (56.21)**	
Controls for I/B/E/S guidelines:				
Dummy(Review date < Prior EA)	0.480*** (120.41)	0.001*** (7.02)	0.054*** (9.09)	0.269*** (39.79)
(EA - Review date) > 105 days	0.115*** (34.85)	0.000*** (2.79)	0.003 (0.90)	0.034*** (11.30)
(EA - Forecast ann. date) > 180 days	0.061*** (48.95)	-0.000** (-2.09)	0.007*** (3.46)	0.020*** (12.28)
Rank(Review date - Prior EA)	-0.057*** (-30.89)	-0.000*** (-19.93)	-0.055*** (-23.43)	-0.021*** (-13.38)
Rank(Review date - Forecast ann. date)	0.038*** (26.36)	0.001*** (18.03)	0.050*** (24.14)	0.021*** (15.61)
Firm*Year-Qtr FE	Yes	Yes	Yes	Yes
Analyst FE	Yes	Yes	Yes	Yes
Cluster SE	Firm	Firm	Firm	Firm
Observations	2,228,946	810,637	810,637	810,637
Adjusted R^2	0.418	0.876	0.603	0.208
Kleibergen-Paap rk Wald F-stat (Weak identification test)				192.86***

Table 3 presents results on whether I/B/E/S uses discretion to exclude inaccurate and optimistic forecasts. Column (1) reports the results estimated from OLS regressions. Column (2) and (3) report the results estimated from the first stage of IV regressions. Column (4) report the results estimated from the second stage of IV regressions. We include firm*year-quarter fixed effects through column (1) to (4). Appendix A contains detailed variable definitions. We cluster standard errors by firm. *, **, and *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 4 Control for the "majority basis" policy following Brown and Larocque (2013)

	DV= ***Exclusion*** (1)	DV= ***Exclusion*** (2)	DV= ***Signed_FE*** (3)
Abs_FE	**4.518*** (10.20)**	**4.598*** (6.21)**	
Optimism	**0.018*** (5.41)**	**0.027*** (5.64)**	
Proxies for "Majority Basis":			
Diff_dummy	0.022*** (9.33)		**0.000 (1.49)**
Diff_continuous	0.048** (2.09)		
Controls for other I/B/E/S guidelines:			
Dummy(Review date < Prior EA)	Omitted Omitted	Omitted Omitted	
(EA - Review date) > 105 days	-0.323** (-2.01)	Omitted Omitted	-0.005*** (-4.08)
(EA - Forecast ann. date) > 180 days	Omitted Omitted	Omitted Omitted	
Rank(Review date - Prior EA)	-0.069*** (-6.23)	-0.062*** (-4.05)	0.001* (1.71)
Rank(Review date - Forecast ann. date)	0.057*** (7.75)	0.045*** (4.79)	-0.001*** (-2.85)
Firm*Year-Qtr FE	Yes	Yes	Yes
Analyst FE	Yes	Yes	Yes
Cluster SE	Firm	Firm	Firm
Observations	68,902	28,437	66,615
Adjusted R^2	0.162	0.154	0.895
Sample	Q1 forecasts	Q1 forecasts excluding those with $Diff\_dummy = 1$	Q1 forecasts

Table 3 presents results on whether inaccurate and optimistic forecasts are more likely to be excluded after controlling for the "majority basis" policy following Brown and Larocque (2013). We create two variables *Diff_dummy* and *Diff_continuous* to capture the situations in which analysts didn't use majority accounting basis. Following Brown and Larocque (2013), these two variables can only be constructed for Q1 forecasts. In column (1), we estimate whether inaccurate and optimistic Q1 forecasts are more likely to be excluded after controlling for *Diff_dummy* and *Diff_continuo*. In column (2), we eliminate all the forecasts that are estimated using non-majority accounting basis and re-run the test to see if inaccurate and optimistic Q1 forecasts are more likely to be excluded. In column (3), we examine whether forecasts that are estimated using non-majority basis are more likely to have positive forecast errors. We cluster standard errors by firm. *, **, and *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 5 Inter-temporal tests for the opportunistic view

	$DV =$ ***Exclusion***		
	(1)	(2)	(3)
Optimism*Dummy(Qtrly forecast)	**0.009*****	**0.007*****	**0.003***
	(6.10)	**(4.26)**	**(1.80)**
Optimism	0.008***	0.012***	0.010***
	(6.87)	(7.11)	(6.70)
Dummy(Qtrly forecast)	0.013***	0.029***	0.018***
	(8.26)	(16.18)	(10.69)
Abs_FE	0.320***	0.316***	0.276***
	(27.29)	(21.03)	(19.97)
Controls for I/B/E/S guidelines:			
Dummy(Review date < Prior EA)	0.277***	0.324***	0.260***
	(86.41)	(79.65)	(71.81)
(EA - Review date) > 105 days	0.066***	0.070***	0.066***
	(51.31)	(48.85)	(47.77)
(EA - Forecast ann. date) > 180 days	0.010***	0.024***	0.018***
	(9.15)	(18.59)	(14.34)
Rank(Review date - Prior EA)	0.041***	0.031***	0.030***
	(21.76)	(11.46)	(12.81)
Rank(Review date - Forecast ann. date)	0.022***	0.035***	0.050***
	(12.00)	(13.68)	(23.03)
Firm*Year-Qtr FE	No	Yes	Yes
Analyst FE	Yes	No	Yes
Firm FE	Yes	No	No
Year-Qtr	Yes	No	No
Cluster SE	Firm	Firm	Firm
Observations	1,644,520	1,644,520	1,644,520
Adjusted R^2	0.279	0.271	0.340

Table 5 presents results on whether I/B/E/S is more likely to exclude optimistic quarterly forecasts, compared to the annual forecasts issued on the same day by the same analyst. In this analysis, we focus on the most recent Q1 (Q2, Q3) forecasts by each analyst before the Q1(Q2, Q3) EA date. Then, we merge in the annual forecasts that are issued on the same day by the same analyst. We exclude all the Q4 forecasts and annual forecast issued on the same day by the same analyst as these Q4 quarter forecasts, because we expect managers would have same incentives to meet or beat the Q4 IBES consensus and annual IBES consensus. In column (1), we include firm FE, year-qtr FE and analyst FE. In column (2), we include firm*year-qtr FE. In column (3), we include firm*year-qtr FE and analyst FE. Appendix A contains detailed variable definitions. We cluster standard errors by firm. *, **, and *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 6 Cross-sectional tests for the opportunistic view

	DV=*Exclusion*			
		3 proxies for information asymmetry		
	Previous MB	Std. dev (stock returns)	Median (bid-ask spread)	Forecast dispersion
	(1)	(2)	(3)	(4)
Optimism*Previous MB	**0.036*****			
	(7.10)			
Optimism*Information asymmetry		**0.019*****	**0.007*****	**0.028*****
		(6.90)	**(2.63)**	**(11.10)**
Optimism	0.008***	0.024***	0.027***	0.010***
	(3.03)	(13.87)	(13.17)	(4.56)
Abs_FE	4.828***	5.682***	5.705***	5.690***
	(39.71)	(32.95)	(33.07)	(33.02)
Controls for I/B/E/S guidelines:				
Dummy(Review date < Prior EA)	0.481***	0.455***	0.455***	0.455***
	(110.65)	(79.20)	(79.26)	(79.21)
(EA - Review date) > 105 days	0.115***	0.144***	0.144***	0.144***
	(31.89)	(28.54)	(28.54)	(28.57)
(EA - Forecast ann. date) > 180 days	0.061***	0.057***	0.057***	0.057***
	(44.93)	(34.96)	(34.86)	(34.81)
Rank(Review date - Prior EA)	−0.057***	−0.060***	−0.060***	−0.060***
	(−28.58)	(−26.45)	(−26.47)	(−26.34)
Rank(Review date - Forecast ann. date)	0.038***	0.038***	0.038***	0.038***
	(24.53)	(21.40)	(21.37)	(21.29)
Firm*Year-Qtr FE	Yes	Yes	Yes	Yes
Analyst FE	Yes	Yes	Yes	Yes
Cluster SE	Firm	Firm	Firm	Firm
Observations	2,228,946	1,481,583	1,480,454	1,481,736
Adjusted R^2	0.411	0.394	0.394	0.394

Table 6 presents results on whether the probability of excluding optimistic forecasts varies across firms with different characteristics. Column (1) reports results on whether the probability of excluding optimistic forecasts increases when firm managers have stronger incentives to meet or beat I/B/E/S consensus. Column (2) to column (3) report results on whether the probability of excluding optimistic forecasts increases when the firm has a greater level of information asymmetry. Appendix A contains detailed variable definitions. We cluster standard errors by firm. *, **, and *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 7 Market reaction around the forecast issuance date

Panel A Summary statistics

Variables	N	Mean	Std. dev.	Q1	Median	Q3
All forecasts:						
Abnormal Return_Forecast issuance date_[-2,+2]	2,030,410	-0.002	0.075	-0.033	-0.001	0.032
Subsequently excluded forecasts:						
Abnormal Return_Forecast issuance date_[-2,+2]	116,517	-0.004	0.081	-0.038	-0.002	0.032
Subsequently included forecasts:						
Abnormal Return_Forecast issuance date_[-2,+2]	1,913,893	-0.002	0.075	-0.033	-0.000	0.032
REV	2,030,410	-0.004	0.013	-0.005	-0.002	0.000
LOSS	2,030,410	0.146	0.353	0	0	0
MVE	2,030,410	9371.732	22171.320	596.837	1966.955	7172.320
Log(MVE)	2,030,410	7.653	1.762	6.393	7.584	8.878
BTM	2,030,410	0.480	0.383	0.226	0.399	0.644
AWARD	2,030,410	0.142	0.349	0	0	0
BSIZE	2,030,410	45.835	33.754	17	38	72
Log(BSIZE)	2,030,410	3.499	0.941	2.890	3.663	4.290
GEXP	2,030,410	8.334	5.259	4	7	12
Log(GEXP)	2,030,410	2.063	0.609	1.609	2.079	2.565
FREQ	2,030,410	291.347	243.879	126	225	381
Log(FREQ)	2,030,410	5.336	0.898	4.844	5.420	5.945
AVABSFE	2,030,410	0.011	0.0165	0.003	0.005	0.011
AVFE	2,030,410	-0.006	0.014	-0.006	-0.000	-0.000

Panel A of Table 7 reports the descriptive statistics for the variables we used in this analysis. Appendix A contains detailed variable definitions.

Table 7 Market reaction around the forecast issuance date (cont'd)

Panel B Multivariate analysis

	DV= *Abnormal Return_Forecast issuance_[-2, +2]*
REV*Exclusion	**0.009*** **(5.398)**
Exclusion	0.001 (1.452)
REV	0.018*** (13.349)
Response controls:	
LOSS	-0.117 (-1.310)
REV*LOSS	-0.015*** (-8.199)
Log(MVE)	0.166 (1.287)
REV*Log(MVE)	-0.014*** (-7.304)
BTM	0.596** (2.001)
REV*BTM	-0.016*** (-6.725)
Analyst controls:	
AWARD	0.000 (1.648)
REV*AWARD	-0.003*** (-4.720)
Log(BSIZE)	-0.001** (-2.082)
REV*Log(BSIZE)	0.009*** (7.328)
Log(GEXP)	-0.000 (-0.820)
REV*Log(GEXP)	0.006*** (8.413)
Log(FREQ)	-0.001*** (-2.930)
REV*Log(FREQ)	0.002* (1.853)
AVABSFE	0.002*** (3.542)
REV*AVABSFE	-0.002 (-1.508)
AVFE	0.002*** (5.172)
REV*AVFE	-0.006*** (-5.741)
Firm*Year-Qtr FE	Yes
Cluster SE	Year-Qtr
Observations	2,030,410
Adjusted R^2	0.393

Panel B of Table 7 reports whether market investors view forecasts, subsequently excluded by I/B/E/S, less informative when these forecasts are initially issued. Following Hugon and Muslu (2010), we regress the abnormal return around forecast issuance dates on the interaction between forecast revision and a dummy variable indicating forecasts subsequently excluded by IBES, after controlling for firm-specific characteristics and forecast-specific characteristics. All the continuous independent variables in this table are transformed into percentile ranks that range from -0.5 to 0.5. Appendix A contains detailed variable definitions. We cluster standard errors by firm. *, **, and *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 8 Market reaction to the exclusion action

Panel A Summary Statistics

Variables	N	Mean	Std. dev.	Q1	Median	Q3
Abnormal Return_Exclusion date_[-2,+2]	48,957	-0.007	0.077	-0.033	-0.003	0.026
Abnormal Return_[Exclusion date + 3, EA date - 3]	48,957	-0.001	0.098	-0.050	-0.002	0.045
Abnormal Return_EA date_[-2,+2]	48,957	0.001	0.187	-0.077	-0.004	0.066
Abnormal Return_Exclusion date_[- 30, - 3]	48,957	-0.011	0.158	-0.088	-0.009	0.066
Abnormal Return_EA date_[-30,-3]	48,957	-0.004	0.150	-0.076	-0.006	0.062
Consensus Revision	48,957	-0.001	0.003	-0.001	-0.001	0.001
MVE	48,957	7851.453	20108.65	435.562	1420.137	5211.767
Log(MVE)	48,957	7.364	1.789	6.079	7.259	8.558
BTM	48,957	0.507	0.440	0.230	0.412	0.679
ROA	48,957	0.097	0.654	0.007	0.161	0.295
Asset growth rate	48,957	0.310	0.831	-0.001	0.093	0.275

Panel A of Table 8 reports the descriptive statistics for the variables used in this analysis. All variables are defined in the Appendix A.

Table 8 Market reaction to the exclusion action (cont'd)

Panel B Market reaction to changes in IBES consensus due to the exclusion action

	DV= *Abnormal Return Exclusion date_[-2, +2]*	DV= *Abnormal Return [Exclusion date + 3, EA date - 3]*	DV= *Abnormal Return EA date_[-2, + 2]*
	(1)	(2)	(3)
Consensus revision	**0.012*** (7.47)**	**0.013*** (3.33)**	**0.006*** (3.97)**
BTM	0.008*** (5.11)	-0.000 (-0.03)	0.009*** (3.71)
ROA	0.000 (0.16)	0.002 (0.28)	0.001 (0.38)
Asset growth rate	0.006*** (3.11)	0.016** (2.09)	0.007*** (3.51)
Log(MVE)	-0.005** (-2.59)	-0.024*** (-4.51)	-0.006*** (-3.23)
Abnormal Return_Exclusion date_[- 30, - 3]	0.009*** (4.39)	0.020*** (3.07)	
Abnormal Return_EA date_[-30,-3]			-0.006** (-2.20)
Year-Qtr FE	Yes	Yes	Yes
Cluster SE	Year-Qtr	Year-Qtr	Year-Qtr
Observations	48957	48957	48957
Adjusted R^2	0.031	0.022	0.011

Panel B of Table 8 reports results on how market investors react to the changes in I/B/E/S consensus. In column (1), we estimate how market investors react to changes in I/B/E/S consensus around the exclusion date. In column (2), we estimate how market investors react to changes in I/B/E/S consensus during the period after the exclusion date and before the earnings announcement date. In column (3), we estimate how market investors react to changes in I/B/E/S consensus around the earnings announcement date. All the continuous independent variables in this table are transformed into percentile ranks that range from -0.5 to 0.5. Appendix A contains detailed variable definitions. We cluster standard errors by firm. *, **, and *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.