Online Appendix to

"The Value of Crowdsourced Earnings Forecasts"

Jame, Johnston, Markov, and Wolfe (2016)

This online appendix tabulates and discusses the results of robustness checks and supplementary analyses briefly mentioned in the paper.

A1. Estimating Characteristic Forecasts

Following So (2013), we model firm *j*'s quarter *t* earnings as a function of firm characteristics. Specifically, each quarter we estimate the following cross-sectional regression:

$$\begin{aligned} EPS_{j,t} = {} & \beta_0 + \beta_1 EPS^{+}_{j,t-1} + \beta_2 EPS^{+}_{j,t-4} + \beta_3 NEGE_{j,t-1} + \beta_4 NEGE_{j,t-4} \\ & + \beta_5 ACC^{-}_{j,t-1} + \beta_6 ACC^{+}_{j,t-1} + \beta_7 AG_{j,t-1} + \beta_8 DD_{j,t-1} + \beta_9 DIV_{j,t-1} \\ & + \beta_{10} BTM_{j,t-1} + \beta_{11} PRICE_{j,t-1} + \beta_{12} Ret_{j,t-1} + \varepsilon_{j,t,} \end{aligned} \quad \text{(IA.1)}$$

where $EPS_{j,t}$ is actual earnings per share for firm *j* in quarter *t*, as reported by IBES. The remaining variables are measured in either the previous quarter or the equivalent quarter of the previous year, indicated by the subscripts t-1 and t-4, respectively. $EPS^{+}_{j,t-1}$ ($EPS^{+}_{j,t-4}$) is the firm's earnings per share left-truncated at zero;[1] $NEGE_{j,t-1}$ ($NEGE_{j,t-4}$) indicates negative earnings; $ACC^{-}_{j,t-1}$ is the absolute value of accruals per share, calculated as net income before extraordinary items (Compustat item IBQ) minus operating cash flows (Compustat item OANCFQ) when accruals are negative and zero otherwise, and $ACC^{+}_{j,t-1}$ are accruals per share when accruals are positive and zero otherwise; $AG_{j,t-1}$ is quarterly asset growth as a percentage of lagged assets (Compustat item ATQ); $DD_{j,t-1}$ is a dummy variable identifying non-dividend paying firms; $DIV_{j,t-1}$ is dividends per share (Compustat item DVPSXQ); $BTM_{j,t-1}$ is the book-to-market ratio at the end of the previous quarter (Compustat items PRCCQ x CSHOQ/SEQQ);

[1] Using only $EPS^{+}_{j,t-1}$ or $EPS^{+}_{j,t-4}$ results in slightly weaker results.

$PRICE_{j,t-1}$ is the firm's share price at the end of the previous quarter (Compustat item PRCCQ); and $Ret_{j,t-1}$ is the cumulative marked-adjusted return for firm *j* from the day after quarter *t-1* earnings are announced to the day before the construction of the characteristic forecast. In the analysis presented below, the return window ends two days before earnings are announced, which allows us to generate a statistical forecast with a one day horizon.[2] All continuous variables are winsorized at the 1st and 99th percentile.

Panel A of Table IA.1 reports the average parameter estimates from the estimation of equation IA.1. Our findings are generally consistent with So's (2013) findings (Table 1, p. 621). Specifically, lagged earnings and stock price are positively correlated with future earnings, while negative earnings are strongly negatively associated with future earnings. As expected, past returns are positively associated with future earnings. Overall, our model does a relatively good job in explaining cross-sectional variation in actual earnings as evidence by the r-squared of 65.5% compared to the 56.1% reported in So (2013).

We generate a characteristic forecast of firm *j*'s quarter *t+1* earnings the day before earnings are announced, $CF_{j,t+1}$, by multiplying Panel A's regression coefficients and quarter *t* firm characteristics. Panel B of Table IA.1 confirms that *CF* is strongly predictive of future earnings: In a regression of quarter *t+1* earnings on CF_{t+1}, *CF* explains 63.7% of the variation in future earnings. As a reference, So's (2013) characteristic forecast explains about 47.8% of the variation in future earnings (Table 1, p. 621).

Panel B also benchmarks the forecasting performance of *CF* against that of the Estimize consensus and the IBES consensus for a sample of firm-quarters with Estimize and IBES

[2] Intuitively, in generating a statistical forecast of earnings one day (ten) days before earnings are announced, it makes sense to exploit earnings-relevant information incorporated in prices two (eleven) days before earnings are announced. We focus on the shortest horizon because Estimize forecasts are issued at the very end of the period, as evidenced by the median forecast horizon of two days. So (2013) does not include returns as an earnings predictor.

forecasts. The Estimize (IBES) consensus includes all forecasts made by Estimize contributors (IBES analysts) two days before earnings are announced or earlier. We find that *CF* explains 81.6% of the variation in future earnings, considerably less than the Estimize consensus (95.4%) and the IBES consensus (94.5%). The IBES consensus in So (2013) explains 58% of the variation in future earnings, but it is constructed five months after the end of the firm's fiscal year (Table 1, p. 621). Since Estimize forecasts are predominantly short-term and, as a result, highly accurate, statistical approaches that seek to outperform them by utilizing information in firm characteristics may not be particularly effective. We acknowledge that including stock returns as an earnings predictor may not be the best way of extracting earnings-relevant information, and we leave it to future research to develop better approaches.

A2. The Value of the Characteristic Forecast – Alternative Weighting Schemes

Panel B of Table 6 reports that the *Estimize Consensus* is more accurate than the *Combined Consensus,* computed by equally weighting the *Estimize Consensus* and the characteristic forecast (*CF*). In this section, we explore whether reducing the weight on the *CF* (the less accurate component) and increasing the weight on the *Estimize Consensus* (the more accurate component), yields a superior *Combined Consensus*.

Table IA.2 reports the percentage of times that the *Combined Consensus* is more accurate than the *Estimize Consensus* (i.e., the last column from Table 6). We observe that weighting *CF* by 5% or 10% (and the *Estimize Consensus* by 95% and 90%, respectively) yields a *Combined Consensus* only slightly more accurate than the *Estimize Consensus*: approximately 56% of the time at the long horizon and 53% of the time at the short horizon.

A3. Forecast Bias at Long and Short Horizons – Different Samples

Panel B of Table 4 indicates that IBES forecasts tend to be pessimistic at all horizons, inconsistent with prior findings of optimism at longer horizons and pessimism at shorter horizons (see e.g., Richardson, Teoh, and Wysocki, 2004). To reconcile these findings, in Table IA.3 we compute the bias for both annual forecasts (Row 1) and quarterly forecasts (Row 2) for the 1984-2001 sample period analyzed in Richardson, Teoh, and Wysocki (2004). Consistent with Richardson, Teoh, and Wysocki (2004), we find significant optimism in annual and quarterly forecasts at long horizons and a substantially reduced optimism at shorter horizons. When we conduct this analysis for the 2002-2014 period (Row 3) and the 2012-2013 period analyzed in our study (Row 4), we find pessimism at all horizons. Thus, the difference between our findings and prior work is largely due to differences in the sample period studied.

A4. Flagged Estimates

To ensure data integrity, Estimize flags and excludes estimates from their consensus that are deemed unreliable.[3] In Table IA.4, we examine whether our main findings, that Estimize forecasts are incrementally usefulness in forecasting earnings and measuring the market expectation (Panels A and B) and that they convey new information to the market (Panel C), are sensitive to (1) including Estimize-flagged estimates (2.5% of the full sample) and (2) excluding estimates which are statistical outliers (i.e., more than three standard deviations away from the mean of all Estimize and IBES forecasts (3% of the full sample)).

Panels A, B, and C of Table IA.4 revisit Specification 4 of Table 8, Specification 4 of Table 9, and Specification 1 of Table 10, respectively. In each panel, Specification 1 reports the original result, and Specifications 2 and 3 report results after including Estimize-flagged observations and excluding statistical outliers, respectively.

[3] Additional details on the flagging procedure can be found here: https://www.estimize.com/faq#reliability

The result that Estimize forecasts are incrementally useful in predicting future earnings (Panel A) is sensitive to including Estimize-flagged observations. The slope coefficient on the Estimize consensus drops from 0.57 to 0.08, indistinguishable from zero. Excluding observations flagged as statistical outliers restores the slope coefficient to 0.48 (t=2.68). These findings suggest that an ex ante screening of erroneous forecasts can enhance the value of crowdsourced forecasts.[4]

The result that Estimize forecasts are incrementally useful in capturing the market expectation (Panel B) is somewhat sensitive to including flagged observations. The slope coefficient is reduced from 1.39 to 1.08, but it is still statistically significant and comparable to the slope coefficient on the IBES consensus. As in Panel A, eliminating statistical outliers yields an intermediate coefficient (1.19).

Finally, the price impact result (Panel C) is robust to including Estimize-flagged observations and excluding statistical outliers. The slope coefficient on Estimize consensus revisions ranges from 0.13 to 0.15, significant at the 5% level in all cases.

A5. Determinants of Estimize Coverage

In this section, we build on Table 2's univariate analysis of the relations among Estimize coverage, IBES coverage, and key firm characteristics. Specifically, we report the results from a regression analysis of the determinants of Estimize coverage (Specifications 1 and 2), IBES coverage (Specification 3), and the difference between Estimize and IBES coverage (Specification 4). The dependent variable is the natural log of *(1+ Contributors)*, where *Contributors* is the total number of Estimize (or IBES) contributors issuing forecasts for the firm during the quarter. Determinants include size, book-to-market, volatility, turnover, and, in

[4] It is important to note that IBES incorporates analyst estimates in its products and services after an "extensive and thorough verification process" (Thomson Reuters, 2009).

Specification 2, IBES coverage (all in natural logs). We also include time fixed effects to control for the general increase in Estimize coverage over time.

Consistent with Table 2, Specifications 1 and 2 of Table IA.5 indicate greater Estimize coverage of firms that are larger, more volatile and heavily traded, and that have lower book-to-market ratios (i.e., more growth-oriented). The almost zero coefficient on *IBES Coverage* in Specification 2 suggests that the correlation between Estimize coverage and IBES coverage documented in Table 2 is largely explained by their common covariation with a small set of firm characteristics. The results in Specification 3 parallel those in Specification 1 with one exception: IBES analysts do not exhibit a significant preference for covering growth stocks. Finally, relative to IBES, Estimize coverage favors smaller stocks, growth stocks, and stocks with lower turnover (Specification 4).

A6. Determinants of Relative Accuracy, Bias, and Boldness

In this section, we explore whether differences in accuracy, bias, and boldness between Estimize and IBES forecasts (the subject of Table 4) depend on size, book-to-market, volatility, turnover, the number of IBES contributors, and the number of Estimize contributors, each measured in natural logs.

Specification 1 (2) of Table IA.6 reports results when the dependent variable is the average accuracy of individual Estimize forecasts minus the average accuracy of individual IBES forecasts for the same firm-quarter and with the same horizon of 30-90 (1-4) days (*Relative Accuracy*). We find that Estimize is relatively less accurate when sell-side coverage is greater. There is also some weak evidence that the relative accuracy of Estimize forecasts at shorter horizons is increasing in the number of Estimize contributors.

Specifications 3 and 4 conduct analogous tests with the dependent variable, *Relative Bias,* defined as the bias (i.e., [Forecast – Actual]/Price) of the average individual Estimize forecasts minus the bias of the average individual IBES forecasts. Thus, *Relative Bias* increases when Estimize forecasts are more optimistic relative to IBES forecasts. We find that Estimize forecasts exhibit greater *Relative Bias* (or relative optimism) when firms have lower book-to-market ratios (i.e., growth firms) and lower volatility.

In Specifications 5 and 6, the dependent variable is the boldness of the average Estimize forecast minus the boldness of the average individual IBES forecast (*Relative Boldness*). We measure boldness as the absolute deviation of the forecast from the current consensus, scaled by the current consensus. We find that Estimize forecasts exhibit greater *Relative Boldness* when there are more IBES contributors. At shorter horizons (Specification 6), Estimize forecasts exhibit lower *Relative Boldness* when there are more Estimize contributors. Both of these findings are consistent with independence declining as the size of contributor base increases.

A7. Analysis of Estimize Forecasts When IBES Coverage is Absent

The value of Estimize forecasts could be enhanced in the absence of sell-side competition or diminished if sell-side forecasts are a critical information input for Estimize contributors. The existence of a small sample of firm-quarters with Estimize coverage but no corresponding IBES coverage (Table 2) provides an opportunity to explore these competing views.

We first examine whether Estimize is a better measure of the market expectation when no IBES coverage exists. Panel A of Table IA.7 modifies Specification 1 of Table 9 by interacting *Estimize Consensus Error* with a dummy variable equal to one if there is no IBES coverage.[5] The interaction term is statistically insignificant. However, the *No IBES Coverage* dummy is

[5] In Table 9, we only include firm-quarters with more than five unique (Estimize or IBES) forecasts. However, very few firm quarters have zero IBES coverage and at least five contributors, so we no longer impose this filter.

negatively correlated with the size of the contributor base (Table 2), which drives the benefits of crowdsourcing. In Specification 2, we control for the size of the contributor base by adding *Log (Estimize Contributors)* as a main effect and an interaction effect with *Estimize Consensus Error.* The interaction term of interest, *Estimize Consensus Error * No IBES Coverage*, is now statistically significant, which suggests that, holding the number of Estimize contributors constant, Estimize is a better measure of the market's expectation of earnings when IBES coverage is absent.

Next, we examine whether the market reaction to Estimize consensus revisions is significantly different in the absence of IBES coverage. Panel B of Table IA.7 augments Specification 1 of Table 10 by interacting Estimize consensus revisions (*Rev/Price*) with a dummy variable equal to one if there is no IBES coverage. We find that a one standard deviation change in *Rev/Price* is associated with a 0.10% increase for firms with IBES coverage and a 0.36% (0.10% + 0.26%) increase for firms with no IBES coverage. The difference between the two estimates is significant at the 1% level, suggesting that Estimize revisions convey more information when IBES coverage is absent. This is consistent with our findings of greater price impact when IBES coverage is below the median (Specification 4 of Table 10). Taken together, these results suggest that Estimize conveys more new information to the market when there is less competition from sell-side analysts.

A8. Predicting IBES Consensus Revisions

The evidence that Estimize forecasts contain information not fully reflected in contemporaneous IBES forecasts (Table 8) or market prices (Table 10) raises the possibility that Estimize forecasts incorporate information earlier than some IBES forecasts. To test this

conjecture, we examine whether Estimize revisions predict the sign of subsequent IBES revisions.

From the initial sample of Estimize consensus revisions, we eliminate 5,860 revisions that occur within a day of the earnings announcement since there is insufficient time for IBES analysts to respond. We do not eliminate forecast revisions that coincide with other information events because the relative responsiveness of each analyst group is our research focus.

We estimate the following regression:

$$IBES\,UP_{j,t+1,t+x} = \alpha + \beta_1 Est\,Rev\,Quartile_{j,t,t-1} + \beta_2 Ret_{j,t,t-5} + \beta_3 Ret_{j,t-6,t-20} + \beta_4 IBES\,Rev\,Quartile_{j,t,t-5} + \beta_5 IBES\,Rev\,Quartile_{j,t-6,t-20} + \varepsilon. \quad \text{(IA.2)}$$

$IBES\,UP_{j,t+1,t+x}$ is a dummy variable equal to one (zero) if the IBES consensus for firm *j* increased (decreased) between day *t+1* (the day after the Estimize consensus revision) and day *t+x, w*here x equals either five or 20. If the IBES consensus remains unchanged after five (or 20) days, the observation is excluded from the analysis. If there are fewer than five (or 20) days until the earnings announcement, then *x* is the number of days until the earnings announcement. $Est\,Rev\,Quartile_{j,t,t-1}$ is a quartile ranking of Estimize revisions.

$IBES\,Rev\,Quartile_{j,t,t-5}$ $\left(IBES\,Rev\,Quartile_{j,t-6,t-20}\right)$ is the quartile ranking for the change in the IBES consensus from day *t-5* to *t (t-20, t-6)*, constructed similarly to the Estimize revision quartile ranking. The IBES variables control for differences in response to news across IBES analysts, as well as general predictability in IBES revisions. We include past abnormal returns to address the concern that Estimize consensus revisions predict IBES consensus revisions solely because Estimize contributors are quicker than IBES analysts in incorporating information in past returns. $Ret_{j,t,t-5}\left(Ret_{j,t-6,t-20}\right)$ is the size-adjusted abnormal return over the past five (six to 20) trading days, scaled by the standard deviation of returns to facilitate variable interpretation.

Specifications 1 and 2 of Table IA.8 report the results for the five-day horizon. In a univariate setting, we find that a one-quartile increase in *Estimize Rev Quartile* is associated with a 4.23% increase in the likelihood of an upward IBES consensus revision. After controlling for past returns and past IBES revisions, the coefficient on the *Estimize Rev Quartile* falls to 2.93% but remains statistically and economically significant. For example, a one-quartile increase in *Estimize Rev Quartile* has roughly the same impact on the likelihood of an upward IBES consensus revision as a one-standard-deviation increase in abnormal returns over the past six to 20 trading days. The results over a 20-day horizon are slightly stronger. Specifically, after controlling for past returns and past IBES revisions (Specification 4), the coefficient on the *Estimize Rev Quartile* is 3.23%.

Panel B of Table IA.8 examines the converse prediction that IBES revisions predict subsequent Estimize revisions. We eliminate 931 IBES consensus revisions that occur within a day of the earnings announcement because there is insufficient time for Estimize contributors to respond, and we examine whether the remaining IBES revisions predict the sign of subsequent Estimize revisions by estimating the regression:

$$EstUP_{j,t+1,t+x} = \alpha + \beta_1 IBESRev\,Quartile_{j,t,t-1} + \beta_2 Ret_{j,t,t-5} + \beta_3 Ret_{j,t-6,t-20} + \beta_4 EstRev\,Quartile_{t,t-5} + \beta_5 EstRev\,Quartile_{t-6,t-20} + \varepsilon, \quad \text{(IA.3)}$$

where all variables are defined as in equation IA.2.

We find that IBES revisions also forecast Estimize revisions. For example, over a 20-day horizon, after controlling for past returns and past Estimize revisions, we find that a one-quartile increase in an IBES revision is associated with a 5.91% increase in the likelihood of an upward Estimize revision. We conclude that neither group of forecasters dominates the other in quickly incorporating information.

References for the Internet Appendix:

RICHARDSON, S., S. H. TEOH, and P. D. WYSOCKI. 'The Walk-Down to Beatable Analyst Forecasts: The Role of Equity Issuance and Insider Trading Incentives.' *Contemporary Accounting Research* 21 (2004): 885-924.

SO, E. C. 'A New Approach to Predicting Analyst Forecast Errors: Do Investors Overweight Analyst Forecasts?' *Journal of Financial Economics* 108 (2013): 615-640.

THOMSON REUTERS. Methodology for Estimates – A Guide to Understanding Thomson Reuters Methodologies, Terms and Policies for the First Call and I/B/E/S Estimates Databases, 2009.

Table IA.1: Characteristic Forecast Summary Statistics

Panel A presents the average regression coefficients and t-statistics from quarterly cross-sectional regressions of IBES-reported actual earnings on past earnings and firm characteristics. The variables are measured in either the previous quarter or the equivalent quarter of the previous year, indicated by the subscripts t-1 and t-4, respectively. EPS^{+}_{t-1} (EPS^{+}_{t-4}) is the firm's earnings per share left-truncated at zero. $NEGE_{t-1}$ ($NEGE_{t-4}$) is a dummy variable, equal to one if earnings per share is negative, and zero otherwise. ACC^{-} is the absolute value of accruals per share (net income before extraordinary items (Compustat item IBQ) minus operating cash flows (Compustat item OANCFQ) when accruals are negative and zero otherwise, and ACC^{+} are accruals per share when accruals are positive and zero otherwise. *AG* is asset growth for the quarter as a percentage of lagged assets (Compustat item ATQ), *DD* is a dummy variable identifying non-dividend paying firms, *DIV* measures dividends per share for the quarter (Compustat item DVPSXQ), *BTM* is the book-to-market ratio at the end of the previous quarter (Compustat items PRCCQ x CSHOQ/SEQQ), and *PRICE* is the firm's share price at the end of the previous quarter (Compustat item PRCCQ). *Ret* reflects the marked-adjusted return from the day after quarter *t-1* earnings are announced to two days before quarter *t* earnings are announced. Panel B reports the results from univariate regressions of future earnings on: the Characteristic Forecast in the full sample (Row 1) and in the sample of firm-quarters with Estimize and IBES forecasts (Row 2), the IBES Consensus (Row 3), and the Estimize Consensus (Row 4). The Characteristic Forecast of quarter *t+1* earnings is obtained by multiplying Panel A's regression coefficients and quarter *t* firm characteristics. The Estimize (IBES) consensus is the average of Estimize (IBES) forecasts made two days before earnings are announced or earlier. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Panel A: Regression of Actual Earnings on Firm Characteristics

Variable	Ave Coefficient	Ave t-statistic
EPS^{+}_{t-1}	0.32***	(14.83)
EPS^{+}_{t-4}	0.48***	(22.66)
$NEGE_{t-1}$	-0.16***	(-7.62)
$NEGE_{t-4}$	-0.11***	(-5.18)
ACC^{-}	-0.01	(-1.03)
ACC^{+}	0.00	(-1.47)
AG	0.06*	(1.84)
DD	-0.04**	(-2.44)
BTM	-0.01	(-0.41)
PRICE *100	0.36***	(9.60)
DIV	-0.08*	(-1.76)
Ret	0.14	(3.75)
Average Observations	3,190	
Average R-squared	65.48%	

Panel B: Regressions of Future Earnings on the Characteristic Forecast, the IBES Consensus, and the Estimize Consensus

	Intercept	Slope	R-squared
CF (Full Sample)	0.00	0.98***	63.65%
	(0.57)	(98.20)	
CF (Estimize Sample)	-0.05***	1.08***	81.57%
	(-6.13)	(97.22)	
IBES (Estimize Sample)	0.02***	1.03***	95.38%
	(3.66)	(147.49)	
Estimize (Estimize Sample)	0.00	1.01***	94.48%
	(0.91)	(119.25)	

Table IA.2: The Incremental Usefulness of the Statistical Forecast for Different Horizons and Weighting Schemes

This table reports the percentage of times that a consensus that combines the Estimize forecast and a statistical forecast based on firm characteristics is more accurate than the Estimize consensus. Horizons range from 60 days prior to the earnings announcement (-60) to the day of the earnings announcement (0). For example, when the horizon is -60 days, the Estimize consensus is the average across all Estimize forecasts issued at least 60 days before the earnings announcement. Combination weights add up to one, and range from 5% to 50% on the statistical forecast, and 95% to 50% on the Estimize consensus, respectively. For example, when the weight is 5% on the statistical forecast, the combined consensus is computed as 5% * Statistical Forecast + 95% * Estimize forecast. Section A1 describes how the statistical forecast is obtained. T-statistics, based on standard errors clustered by firm, are reported in parentheses. The null hypothesis is that the combined consensus is more accurate then Estimize 50% of the time. The sample is all firm-quarters for which an Estimize and statistical forecast is available (See Panel B of Table 6). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

		Weight on Characteristic Forecast					
Horizon	Obs.	5%	10%	20%	30%	40%	50%
-60	382	56.28%**	54.97%**	51.05%	47.64%	44.24%**	42.41%***
		(2.47)	(2.16)	(0.41)	(-0.92)	(-2.26)	(-3.00)
-30	840	56.31%***	55.36%***	51.90%	48.21%	44.88%***	41.43%***
		(3.68)	(3.12)	(1.10)	(-1.04)	(-2.98)	(-5.04)
-10	1,701	53.56%***	52.15%*	47.97%*	43.00%***	39.51%***	36.74%***
		(2.94)	(1.77)	(-1.67)	(-5.80)	(-8.85)	(-11.34)
-5	2,297	54.59%***	52.55%**	48.02%*	43.14%***	40.09%***	37.01%***
		(4.40)	(2.44)	(-1.90)	(-6.63)	(-9.77)	(-12.90)
-1	4,255	52.97%***	50.58%	45.08%***	40.82%***	37.77%***	34.78%***
		(3.85)	(0.75)	(-6.45)	(-12.18)	(-16.46)	(-20.84)
0	4,668	52.87%***	50.41%	45.39%***	41.11%***	37.58%***	35.07%
		(3.93)	(0.56)	(-6.32)	(-12.34)	(-17.53)	(-21.38)***

Table IA.3: Time Variation in Forecast Bias

This table examines forecast bias (*BIAS*) of IBES analysts over time. *BIAS* is the difference between forecasted earnings and actual earnings scaled by the stock price at the end of the previous quarter and multiplied by 100. Row 1 reports the average *BIAS* for forecasts of annual earnings over the 1984-2001 period. Row 2 presents analogous results for quarterly earnings forecasts. Row 3 provides results for quarterly earnings forecasts over the 2002-2014 period. Row 4 limits the sample to quarterly forecasts over the 2012-2013 period. Lastly, Row 5 examines quarterly forecasts over the 2012-2013 period and limits the sample to firm-quarters for which an Estimize forecast is available. For annual forecasts (Row 1), long horizon includes forecasts issued more than 180 days prior to earnings, mid horizon includes forecasts issued 31 to 180 days prior to earnings, and short horizon includes forecasts issued within 30 days of earnings. For quarterly forecasts (Rows 2-5), long horizon includes forecasts issued at least 30 days prior to earnings, while mid horizon (short horizon) includes forecasts issued 10-29 days (less than 10 days) prior to earnings. T-statistics, computed from standard errors clustered by firm, are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

	Long Horizon	Mid Horizon	Short Horizon	Long-Short
1. 1984-2001 (Annual)	2.41***	0.80***	0.13**	2.28***
	(18.30)	(10.26)	(2.40)	(23.62)
2. 1984-2001 (Quarterly)	0.24***	0.00	-0.07***	0.31***
	(10.23)	(-0.18)	(-3.85)	(15.88)
3. 2002-2014 (Quarterly)	-0.07**	-0.12***	-0.13***	0.05**
	(2.26)	(-4.93)	(-6.65)	(2.56)
4. 2012-2013 (Quarterly)	-0.38***	-0.30***	-0.26***	-0.12***
	(-8.35)	(-6.84)	(-7.99)	(-2.62)
5. Row 4 & Estimize Forecast Available	-0.08***	-0.08***	-0.09***	-0.01
	(-9.12)	(-6.33)	(-10.57)	(-0.33)

Table IA.4: The Sensitivity of Results to Including Flagged Observations

This table reports the results for three samples: 1) excluding forecasts flagged by Estimize (*Estimize Flag)*, 2) including all forecasts, and 3) excluding estimates more than three standard deviations away from the mean of all Estimize and IBES forecasts (*Statistical Flag*). Panels A and B examine whether Estimize forecasts are incrementally useful in forecasting earnings and measuring the market's expectation of earnings, and Panel C reports whether Estimize forecast revisions convey new information to the market. Specification 1 of Panels A and B are identical to Specification 4 of Tables 8 and 9. Specification 1 of Panel C is identical to Specification 1 of Table 10. T-statistics based on standard errors clustered by firm, are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Panel A: Consensus Forecast Accuracy – Horizon-Matched Sample (Specification 4 of Table 8)			
	[1]	[2]	[3]
Intercept	0.00	0.01	0.00
	(-0.16)	(0.54)	(-0.09)
Estimize Consensus	0.57***	0.08	0.48***
	(4.22)	(1.12)	(2.68)
IBES Consensus	0.45***	0.94***	0.54***
	(3.37)	(12.22)	(2.98)
Excluded Sample	Estimize Flag	None	Statistical Flag
Observations.	3005	3052	2971
R-squared	97.65	92.60	97.49
Panel B: Market Reaction to Unexpected Earnings Proxy Variables (Specification 4 of Table 9)			
	[1]	[2]	[3]
Intercept	0.00	0.00	-0.12
	(0.02)	(-0.32)	(-0.88)
Estimize Consensus Error	1.39***	1.08***	1.19***
	(5.35)	(4.71)	(5.43)
IBES Consensus Error	0.98***	1.28***	1.17***
	(4.06)	(5.98)	(5.43)
Excluded Sample	Estimize Flag	None	Statistical Flag
Observations.	3429	3474	3364
R-squared	8.05	8.05	7.97
Panel C: Market Reaction to Estimize Consensus Revisions (Specification 1 of Table 10)			
	[1]	[1]	[3]
Intercept	0.04	0.02	0.03
	(0.72)	(0.45)	(0.52)
Estimize (Rev/Price)	0.15**	0.13**	0.14**
	(2.31)	(2.02)	(2.10)
Excluded Sample	Estimize Flag	None	Statistical Flag
Observations	4488	4655	4542
R-squared	0.30%	0.22%	0.24%

Table IA.5: Determinants of Estimize Coverage

This table reports the results from a regression analysis of the determinants of Estimize coverage (Specifications 1 and 2), IBES Coverage (Specification 3) and the difference between Estimize and IBES Coverage (Specification 4). The dependent variable is the natural log of (*1+ Contributors*), where *Contributors* is the total number of Estimize (or IBES) contributors issuing forecasts for the firm during the quarter. The independent variables include *Size*, *BM*, *Vol*, and *Turn*. *Size* equals price times shares outstanding computed on the last day of the prior year; *BM* equals book value of equity divided by size, computed on the last day of the prior year; *Vol* equals the standard deviation of daily stock returns over the prior year; and *Turn* equals the daily average of share volume divided by shares outstanding during the prior year. T-statistics, based on standard errors clustered by firm, are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

	Log (1+Estimize Contributors)	*Log (1+Estimize Contributors)*	*Log (1+IBES Contributors)*	*Log (1 + Estimize) – (Log 1 + IBES)*
	[1]	[2]	[3]	[4]
Intercept	-1.83***	-1.82***	-1.56***	-0.28**
	(-18.80)	(-18.90)	(-21.39)	(-2.49)
Log (Size)	0.20***	0.20***	0.25***	-0.05***
	(19.71)	(19.69)	(35.79)	(-4.39)
Log (BM)	-0.12***	-0.12***	0.01	-0.12***
	(-10.13)	(-10.14)	(0.75)	(-8.82)
Log (Vol)	0.22***	0.22***	0.15***	0.06*
	(7.33)	(7.32)	(6.22)	(1.82)
Log (Turn)	0.15***	0.15***	0.20***	-0.05***
	(10.88)	(10.75)	(18.47)	(-3.34)
Log (IBES Contributors)		0.01		
		(0.64)		
Time Dummies	Yes	Yes	Yes	Yes
R-squared	31.62	31.62	39.74	9.69
Observations	22877	22877	22877	22877

Table IA.6: Determinants of Relative Accuracy, Bias, and Boldness

This table reports the results from a regression analysis of the determinants of *Relative Accuracy* (Specifications 1 and 2), *Relative Bias* (Specifications 3 and 4), and *Relative Boldness* (Specifications 5 and 6). *Relative Accuracy* is the average accuracy of individual Estimize forecasts less the average accuracy of individual IBES forecasts for the same-firm quarter and the same horizon. *Relative Bias* is defined as the bias (i.e., [Forecast – Actual]/Price) of the average individual Estimize forecasts minus the bias of the average individual IBES forecasts. *Relative Boldness* is the boldness of the average Estimize forecast less the boldness of the average individual IBES forecast, where boldness is measured as the absolute deviation of the forecast from the current consensus, scaled by the current consensus. All independent variables are defined in Table IA.5. Specifications 1, 3, and 5 report results for forecasts made between 30 and 90 days before the earnings announcement. Specifications 2, 4, and 6 report results for forecasts made between 1 and 4 days before the earnings announcement. T-statistics, based on standard errors clustered by firm, are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

	Estimize - IBES Accuracy		Estimize - IBES Bias		Estimize - IBES Boldness	
	[1]	[2]	[3]	[4]	[5]	[6]
Intercept	0.18	-0.37	-0.63***	-0.44***	2.76**	-0.80
	(0.28)	(-0.74)	(-3.22)	(-3.22)	(2.29)	(-1.35)
Log (Size)	-0.03	0.00	0.01	0.01	-0.12*	0.01
	(-0.80)	(-0.05)	(1.26)	(1.18)	(-1.92)	(0.48)
Log (BM)	-0.01	0.02	-0.09**	-0.05**	0.28	-0.02
	(-0.07)	(0.20)	(-2.03)	(-2.03)	(1.40)	(-0.13)
Log (Vol)	0.00	-0.04	-0.03**	-0.01*	-0.01	-0.02
	(-0.05)	(-1.34)	(-1.99)	(-1.76)	(-0.15)	(-0.69)
Log (Turn)	-0.09	0.02	0.00	0.02	-0.22*	0.06
	(-1.35)	(0.34)	(0.06)	(1.22)	(-1.65)	(0.89)
Log (IBES Contributors)	0.18**	0.14**	0.01	0.01	0.27**	0.20***
	(2.55)	(2.12)	(0.30)	(0.95)	(2.27)	(3.11)
Log (Estimize Contributors)	-0.05	-0.07*	0.01	-0.02	0.01	-0.12***
	(-1.07)	(-1.75)	(0.35)	(-1.61)	(0.14)	(-3.05)
Horizon	[30,90]	[1,4]	[30,90]	[1,4]	[30,90]	[1,4]
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	4.31%	2.20%	4.02%	2.60%	5.86%	3.55%
Observations	892	1554	892	1554	732	1549

Table IA7: Estimize Forecasts when IBES Coverage is Absent

This table examines whether the market reaction to Estimize forecast errors (Panel A) or Estimize forecast revisions (Panel B) depends on the existence of IBES coverage. Specification 1 of Panel A repeats Specification 1 of Table 9, but also interacts the *Estimize Consensus Error* with a dummy variable equal to one if there is no IBES coverage. Specification 2 augments Specification 1 by including the log of the number of Estimize Contributors as both a main effect and an interaction effect with *Estimize Consensus Error.* Panel B repeats the analysis of Specification 1 of Table 10, but also interacts the Estimize consensus revision (*Rev/Price*) with a dummy variable equal to one if there is no IBES coverage. T-statistics, based on standard errors clustered by firm, are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Panel A: Earnings Response Coefficients (Table 9)		
	[1]	[2]
Estimize Consensus Error	1.65***	0.44***
	(10.38)	(2.96)
*Estimize Consensus Error * No IBES Coverage*	-0.48	1.44***
	(-0.86)	(7.37)
No IBES Coverage	-0.55	-0.57
	(-1.32)	(-1.37)
*Estimize Consensus Error * EC*		3.28*
		(1.93)
Log (Estimize Contributors) [EC]		-0.10
		(-0.86)
Observations	4709	4709
Observations with no IBES Coverage	435	435
R-squared	4.17	4.32

Panel B: Market Reaction to Revisions (Table 10)	
	[1]
Intercept	0.04
	(0.82)
Estimize (Rev/Price)	0.10
	(1.57)
*Estimize (Rev/Price) * No IBES Coverage*	0.26***
	(2.59)
No IBES Coverage	-0.21
	(-0.43)
Observations	4485
Observations with no IBES Coverage	194
R-squared	0.44%

Table IA.8: Forecasting IBES and Estimize Revisions

This tables explores the lead-lag relationship between Estimize and IBES revisions. Panel A reports the results of regressions of future IBES revisions on past Estimize revisions, past IBES revisions, and past returns. Our sample includes Estimize consensus revisions followed by IBES consensus revisions in the next 5 (Specifications 1 and 2) or 20 (Specifications 3 and 4) days. Estimize consensus revision is computed as the Estimize consensus on day *t* less the consensus on day *t-1*, scaled by the stock price as of the prior quarter. Day *t* consensus is the average across all forecasts issued on day *t* or earlier. If a contributor has issued multiple forecasts that meet this criteria, we select the most recent forecast. The dependent variable is a dummy variable equal to one if the change in the IBES consensus from t+1 to t+5 (or t+20) is positive. *Estimize Rev Quartile* is a quartile ranking of the magnitude of the Estimize consensus revision. Group 4 (3) are upward revisions that are above (below) the median breakpoint for all upward revisions. Similarly, group 2 (1) are downward revisions that are above (below) the median breakpoint for all downward revisions. *IBES Rev Quartile* (*t, t-5*) is the quartile rankings for the change in the IBES consensus from day *t-5* to *t*, and *IBES Rev Quartile* (*t-6, t-20*) is defined analogously. *Ret (t, t-5*) is the cumulative size-adjusted return over days *t* to *t-5,* and *Ret (t-6, t-20*) is defined analogously. Panel B reports analogous results for regressions of future Estimize revisions on past IBES revisions, past Estimize revisions, and past returns. T-statistics, based on standard errors clustered by firm, are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Panel A: Forecasting IBES Revisions

Forecasting Period	5 Days Ahead		20 Days Ahead	
Intercept	39.63***	6.13	39.08***	0.00
	(14.08)	(1.58)	(14.23)	(0.00)
Estimize Rev Quartile	4.23***	2.93***	4.47***	3.23***
	(4.23)	(3.03)	(5.26)	(4.12)
Ret (t, t-5)		0.52		0.59
		(0.46)		(0.56)
Ret (t-6, t-20)		3.13**		0.90
		(2.02)		(0.59)
IBES Rev Quartile (t, t-5)		8.96***		9.12***
		(7.41)		(7.49)
IBES Rev Quartile (t-6, t-20)		6.00***		7.90***
		(4.83)		(5.97)
Observations	2,849	2,849	4,070	4,070
R-squared	0.87%	6.15%	0.98%	6.27%

Panel B: Forecasting Estimize Revisions

Forecasting Period	5 Days Ahead		20 Days Ahead	
Intercept	36.30***	21.73***	33.53***	19.64***
	(15.47)	(4.88)	(15.66)	(4.57)
IBES Rev Quartile	5.19***	4.55***	6.65***	5.91***
	(6.12)	(5.61)	(8.96)	(8.32)
Ret (t, t-5)		3.82***		3.07***
		(2.73)		(3.74)
Ret (t-6, t-20)		0.86		2.44**
		(0.86)		(2.46)
Estimize Rev Quartile (t, t-5)		4.43***		4.29***
		(4.72)		(5.02)
Estimize Rev Quartile (t-6, t-20)		2.78**		2.99**
		(2.16)		(2.50)
Observations	3,625	3,625	5,853	5,853
R-squared	1.26%	2.98%	2.16%	3.72%