Conflict in Whispers and Analyst Forecasts: Which One Should Be Your Guide?

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Abstract

This study examines the market reaction to conflicts that arise when analyst forecast errors are positive (negative) and whisper forecast errors are negative (positive). Results from a subsample, which represents firms with actual EPS that meet/beat the analyst forecast but not whisper, and regression analysis provide evidence that the market reaction to whispers is stronger than the market reaction to analysts. Compared to a portfolio that relies solely on either the analyst forecasts or whispers, a portfolio strategy that uses both information, as well as using whispers when the two conflict, results in higher abnormal returns.

I. Introduction

Analyst earnings forecasts are regarded as important factors in stock valuation because they reflect the future earnings expectations of the firm. Any difference between the forecasts and actual earnings (forecast errors) reflects the unexpected earnings of the firm. Moreover, significant market reactions to the forecast errors imply that the market uses forecast errors to update market expectations, thus regarding them as relevant information. Numerous studies in the last three decades provide evidence that the stock market believes analyst forecast errors to have significant information content.[1] In a more recent study, Bagnoli, Beneish, and Watts (1999), hereafter BBW, examine unofficial, anonymous earnings forecasts, commonly known as whispers, and find that whispers, rather than analyst forecasts, are more accurate proxies for market expectations. They conclude that whispers provide information not contained in the analyst forecasts.

BBW examine whisper and analyst forecast errors separately to determine the information contained in each forecast. They do not examine, however, the market reaction to conflicting signals that arise when analyst forecast errors are positive (negative) and whisper forecast errors are negative (positive). Our study examines how the market reacts to whispers and analyst forecasts when conflicting signals occur. It is important to determine how the market reacts to the conflict since approximately 30% of the randomly selected sample presents opposing signals.

An understanding of the market reaction to mixed signals can help an investor make a more informed financial decision. By combining information from whispers and analysts, we may find that information obtained from the analyst forecasts is not contained in whispers, implying that

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[1] Ball and Brown (1968), Beaver, Lambert, and Ryan (1987), Bernard and Thomas (1989), Foster, Olsen, and Shevlin (1984), Fried and Givoly (1982), Hughes and Ricks (1987), Lev (1989), and O'Brien (1988) and others.

information contained in whispers does not subsume information provided by analysts. The combined information content of whispers and analysts is examined in three ways:

1. The market reactions to two subsamples are examined. Subsample 1 represents firms with actual earnings that meet/beat analyst forecasts but not whisper forecasts, and subsample 2 represents firms with actual earnings that meet/beat whisper but not analyst forecasts.
2. A regression analysis is used to examine the relationship between cumulative abnormal returns (CARs) for the subsamples over the pre- and post-announcement periods.
3. Finally, a portfolio is created from the subsamples and this portfolio is examined for greater abnormal returns as compared to a portfolio using only whisper forecast errors or only analyst forecast errors.

Subsample results indicate that the market response to negative whisper forecast errors is stronger than the market response to positive analyst forecast errors. The abnormal returns for subsample 1, consisting of firms with actual earnings per share (EPS) that meet/beat analyst but not whisper forecasts, are statistically significant and negative up to two days after the earnings release. However, the market reaction to subsample 2, containing firms with actual EPS that meets/beats whisper but not analyst forecasts, is statistically insignificant. The results from subsample 1 provide evidence that the market response to the information provided by whispers is stronger than the response to analysts when conflicting signals occur. The regression analysis confirms these results. Whisper forecast errors are correlated with the cumulative abnormal returns during the pre- and post-announcement periods while analyst forecast errors are statistically insignificant.

Even though the market reaction to whispers appears to be stronger than to the analysts, a portfolio strategy that uses both information when two forecasts agree, as well as using whispers when the two conflict, results in a higher abnormal return as compared to a portfolio that relies solely on the analyst forecasts or whispers. While the BBW study concludes that whispers provide information not contained in the analyst forecasts, our results suggest that whispers and analyst forecasts each contain some information not in the other.

Subsamples 3 and 4 are also constructed and examined. Subsample 3 consists of firms with actual EPS that do not meet both whisper and analyst forecasts while subsample 4 represents firms with actual EPS that meet/beat both whispers and analyst forecasts. The market responds negatively to subsample 3 only after the earnings release while it responds positively to subsample 4 before and after announcement. It appears that information leakage occurs prior to the announcement when the news is good.

The remainder of the paper is organized as follows. The next section discusses the background information and hypothesis development. Sample selection, data collection, and methodology are described in Section III. Section IV presents empirical findings and concluding remarks are provided in Section V.

II. Background and Hypotheses

Numerous studies that examine the information content of analyst forecasts find that analyst forecast errors provide additional information content, indicated by statistically significant abnormal stock returns around the earnings announcement date. Ball and Brown (1968) were first to document that earnings forecast errors provide information content. Foster, Olsen, and Shevlin (1984), Hughes and Ricks (1987), and others also find significant abnormal stock returns surrounding the earnings release. For example, Hughes and Ricks (1987) examine analyst forecast errors two days around the announcement date. Using the Spearman rank order correlation test, they find that the analyst forecast errors and abnormal returns are significantly correlated during the two days surrounding the earnings announcement.

The BBW study provides a comparison of analyst and whisper forecast errors over the January 1995 to May 1997 period. Their investigation shows that whispers add to the market expectation beyond the analyst forecasts. Finally, a trading strategy that uses whisper forecasts is compared to a trading strategy that relies only on analyst forecasts. They find that cumulative abnormal returns on relative dates 0 and +1 are greater for a portfolio that utilizes whispers than a portfolio that uses the analyst forecasts. They also examine the timing of whispers and analyst forecasts, and find that the abnormal returns cannot be fully explained by the difference in timing between the analyst and whisper updates.

Our study combines the two forecasts in an attempt to determine how the market responds to conflicting forecast errors. The issue of timing and whether analyst forecasts are stale while whispers continue to change is not relevant in our study because we examine the effect of the forecasts on the day before and the day of announcement (relative Days –1 and 0). During this short period, both published forecasts do not change. Furthermore, when the actual EPS is known on Day 0 and thereafter, forecasting becomes irrelevant.

Subsample 1 (actual EPS meets/beats analyst but not whisper forecasts) and subsample 2 (actual EPS meets/beats whisper but not analyst forecasts) are examined to test whether one forecast drives the market. The null hypothesis states that the market reacts equally to whisper and analyst forecast errors. However, if the market reaction to whispers is stronger, then we expect cumulative abnormal returns (CARs) to react negatively for subsample 1, and positively for subsample 2, stated as the joint hypothesis H1. In contrast, if the market reacts more strongly to analyst forecast errors, we expect CARs to react positively for subsample 1 and negatively for subsample 2, stated as the joint hypothesis H2.

H1: $CAR < 0$ for subsample 1 and $CAR > 0$ for subsample 2.

H2: $CAR > 0$ for subsample 1 and $CAR < 0$ for subsample2.

For completeness, subsample 3 (actual EPS does not meet both whisper and analyst forecasts) and subsample 4 (actual EPS meets/beats both whisper and analyst forecasts) are examined. We expect CARs to be significantly negative for subsample 3 and significantly positive for subsample 4.

III. Data and Methodology

Data Collection and Sample

The actual earnings per share (EPS), analyst forecasts, and whispers are manually collected from a web site currently owned and operated by Sentiments, Expectations, & Earnings (SEE), Inc. a private U.S. company.[‡] Search engine and proprietary software are utilized to examine thousands of messages per day on the key Internet message boards, gathering whisper numbers on any stock. Additional whispers are obtained from web visitors who are encouraged to enter their whispers for any stock. The staff examines the collected whispers and discards the "absurd" outliers and obvious duplicates. The final whisper number published on the web site is an equally scaled average of whispers collected for each stock.[§] A recent article in Barron's states, "Contrary to what has been reported, whispernumber.com doesn't represent analysts," and that 95% of the whispers provided by this web site are from individual investors and only 5% are from brokers.[**]

Our data collection spans from January 1999 to April 2002. The firms are selected based on the news alert provided by the web site. The NASDAQ high technology stocks appear to receive the greatest attention as compared to other industries. Additional firms are randomly selected from a NASDAQ listing in the Center for Research in Security Prices (CRSP) files. We initially selected 140 firms and collect approximately 10 to 12 quarters of analyst forecasts, actual EPS, and whispers from the web site. The collection process resulted in 1,580 actual EPS, 1,555 analyst forecasts, and 1,014 whispers for 136 firms. The number of observations reduces further due to missing values. Our final sample consists of 136 firms with 1,006 firms-quarters.[††] The stock returns are extracted from the CRSP files.

The descriptive statistics in Table 1 provide a summary of financial data for 136 firms obtained from COMPUSTAT. The mean for total assets is $38.989 billion (median is $6.965 billion) and mean market value of equity is $44.713 billion (median is $15.092 billion). The sample mean reflects large firms (such as GE, IBM, Ford Motor Co., and Wal-Mart), but the lower median implies that most of the firms in the sample are smaller firms. Similar results are found for net sales where the mean equals $16.450 billion while the median is $5.380 billion, and for net income with mean equal to $1.096 billion and median of only $255 million. The mean number of shares outstanding equals 1.074 billion while the median equals 424 million shares. Again, these statistics attest to the higher frequency of smaller firms.

Firm performance measures also indicate skewness in the sample. The mean annual stock return is 21.32% while the median is 12.82%. Sales growth is much larger for the mean (38%) compared to the median of 13%. The mean return on assets equals 3% while its median is 5%. Also the mean stock price is higher ($40.51) than the median ($33.20). However, the mean and

[‡] The web site, www.whispernumber.com, has experienced numerous changes in its design and content. Our data were collected in 2002 when historical information for almost 4 years was provided on the web site.
[§] Louis (2000) provides a description of whisper numbers data collection process.
[**] Forsyth (2003), p. T4.
[††] Our sample size is larger than that of the BBW study; they had 127 firms with 288 firms-quarters.

median betas and leverage ratios are relatively close. The mean beta is 1.38 and the median is 1.26 whereas the mean leverage ratio is 20% while its median is 17%.

Table 2 provides summary statistics of the data sample of actual EPS, analyst forecasts, and whisper forecasts.[‡‡] The actual EPS median is $0.25 while the analyst forecast and whisper forecast medians are both equal to $0.24. Even though the medians for the two forecasts are equal, the distribution of analyst forecasts is much closer to the actual EPS. The whispers are generally higher than the analyst forecasts. For example, the 5 percentile for whisper forecast is -$0.24 compared to the analyst forecast of -$0.31 and the 95 percentile equals $0.91 for whispers and $0.88 for the analyst forecasts. These results are consistent with the BBW sample, indicating that whisper forecasts are more optimistic than analyst forecasts.

The unscaled analyst forecast error (UFE) and the unscaled whisper forecast error (UWE) are calculated using equation (1). Consistent with BBW, the forecast errors are scaled by the absolute value of the actual EPS, as shown in equation (2).

$$\text{Forecast error} = \text{Actual EPS} - \text{Forecast} \tag{1}$$

$$\text{Scaled forecast error} = (\text{Forecast error})/|\text{Actual EPS}| \tag{2}$$

The histogram in Figure 1 presents the distribution of scaled forecast errors for analysts (SFE) and scaled whispers errors (SWE). The scaled whisper forecast errors are generally more evenly distributed than the analyst forecast errors. The analyst forecast errors tend to be positively skewed, again indicating analyst conservatism when compared to the whisper forecasts. Table 2 verifies the histogram, with SFE median of 0.03 and mean of 0.09, and SWE median of 0.00 and a mean of –0.07. For SFE, the 25 percentile is equal to 0.00 implying that in 75 percent of the sample, the actual EPS meets/beats the analyst forecast. The analyst forecast errors are more closely distributed around zero while the whisper forecast errors have a greater spread. Again, Table 2 supports the histogram in Figure 1, where the 5 percentile for SFE is –0.17 and –0.67 for SWE, while the 95 percentile is equal to +0.50 for SFE and +0.43 for SWE. The standard deviation for SFE is 0.96 and for SWE, is 1.13. In summary, the sample shows that larger negative SWE verifies the optimism displayed by whisper forecasts, and conversely, lower negative SFE confirms the conservatism of analyst forecasts.

Methodology

Standard event study methodology is used to test hypotheses H1 and H2. The market-adjusted abnormal return is calculated by subtracting the value-weighted CRSP portfolio return from the actual return, or $AR_{i,t} = R_{i,t} - R_{m,t}$, where $AR_{i,t}$ is the market adjusted abnormal return for security i on day t, $R_{i,t}$ is the return for security i on day t, and $R_{m,t}$ is the market return of value weighted index on day t from CRSP. Average abnormal returns (AARs) are obtained by taking a cross-sectional average of abnormal returns for all firms in the sample for each relative event date. (The estimation period incorporates relative days –300 to –46, or 255 days). Average

[‡‡] The analysts forecast and actual EPS in whispersnumber.com were checked and verified with the data in I/B/E/S (First Call).

(cumulative) abnormal returns are assumed to be independent and identically distributed following a normal distribution.

Cumulative average abnormal return, $CAR(T_1, T_2)$, is calculated by summing AARs over the relative dates T_1 to T_2, where T_1 and T_2 are the beginning and the ending relative dates of the event window. We examine relative dates -2 to -1, -2 to 0, -1 to 0, 0 to +1, 0 to +2, and +1 to +2, where -2 is defined as two days prior to the earnings announcement, 0 is defined as the announcement date, and +2 is defined as two days after the announcement date. The buy-hold cumulative abnormal returns (BHCAR) are also examined by compounding the AARs representing a buy-and-hold trading strategy, as shown in equation (3), where T_1 and T_2 are the beginning and the ending relative dates of the event window.

$$BHCAR(T_1, T_2) = [\ (1+AAR(T_1))(\ 1+AAR(T_1+1))\ldots(1+AAR(T_2))\ ] - 1 \qquad (3)$$

Regression analysis is also utilized to test hypotheses H1 and H2. The regression method allows comparison of the relative significance of both forecast errors simultaneously over the pre- and post-announcement periods. We define relative days -2 to -1 as the pre-announcement period, and relative days +1 to +2 as the post-announcement period. We examine the pre-announcement period to determine whether information leakage occurs. The post-announcement period enables us to establish whether investors are able to generate abnormal returns using whisper or analyst forecast errors after the earnings release.

As specified by equation (4), CAR(-2,-1) is regressed on scaled forecast errors, SFE, SWE, and 3 dummy variables D1, D2, and D3. CAR(+1,+2) is also regressed on the same independent variables.[§§]

$$CAR(T_1,T_2)_{i,t} = \gamma_0 + \eta_1 SFE_{i,t} + \eta_2 SWE_{i,t} + \eta_3 D1_{i,t} + \eta_4 D2_{i,t} + \eta_3 D3_{i,t} + \upsilon_{i,t} \qquad (4)$$

where: D1 = 1 if SFE = 0 and SWE < 0; 0 otherwise
D2 = 1 if SWE = 0 and SFE < 0; 0 otherwise
D3 = 1 if SFE < 0 and SWE < 0; 0 otherwise
γ_0 = constant term containing SFE = 0 and SWE = 0

Our joint hypothesis H1 implies that the slope of D1 will be significantly negative ($\eta_3<0$) and the slope of D2 will be significantly positive ($\eta_4>0$). In contrast, hypothesis H2 implies that the slope of D1 will be significantly positive ($\eta_3>0$) and the slope of D2 will be significantly negative ($\eta_4<0$). We expect the slope of D3 to be significantly negative ($\eta_5<0$) while the constant is expected to be significantly positive ($\gamma_0 > 0$).

[§§] The same regressions are repeated using the buy-hold cumulative abnormal returns on Days -2 to -1 (BHCAR(-2,-1)) and on Days +1 to +2 (BHCAR(+1,+2)).

IV. Empirical Results

Market Reaction to Actual Earnings Announcements

Table 3 displays the results for the four subsamples: (1) Actual EPS meets/beats analyst but not whisper forecasts; (2) Actual EPS meets/beats whisper but not analyst forecasts; (3) Actual EPS does not meet both whisper and analyst forecasts; and (4) Actual EPS meets/beats both whisper and analyst forecasts. The first column of Panel A in Table 3 presents the AAR results for subsample 1. The AARs are negative and significant in Days +1 and +2, even when the firms meet/beat the analyst forecasts, reflecting the fact that they did not meet the whisper forecasts. The AARs for Days +1 and +2 equal –0.55% (-2.27) and –1.14% (-4.73), respectively, with t-statistics in parenthesis. The significantly negative AARs indicate that when the two result in opposing forecast errors, the market regards whispers to be more informative.

The results of subsample 2 are mixed. If the market reacts more strongly to whispers than the analyst forecasts, AARs should be positive; however, subsample 2 results are statistically insignificant. This implies that the negative SFE and the positive SWE are interpreted as mixed signals by the market, and neither one is stronger.[***] The results of the two subsamples indicate some evidence in support of hypothesis H1 but not for H2.

For completeness, we report the results for subsamples 3 and 4. Subsample 3 presents the scenario where actual EPS does not meet both whisper and analyst forecasts. In this case, negative statistically significant AARs occur after announcement. The AARs are –1.78% (-3.40) on Day +1 and –2.50% (-4.78) on Day +2. These results reflect the fact that there is no information leakage when the earnings announcements carry negative news.

When actual EPS meets/beats both whisper and analyst forecasts (subsample 4), we find positive statistically significant AARs prior to announcement on Days -2 and –1. This indicates that there is information leakage when the news is positive. The market continues to react on Days 0, +1, and +2. AARs are 0.48% (2.40) for Day -2, 0.42% (2.10) for Day -1, 0.53% (2.64) for Day 0, 0.34% (1.72) for Day +1, and 0.44% (2.18) for Day +2.

Panel B of Table 3 presents the CAR for each subsample.[†††] When the actual EPS meets/beats analyst but not whisper forecasts (subsample 1), the market reacts negatively after the announcement. CAR(0,+1), CAR(0,+2) and CAR(+1,+2) are negative and statistically significant, at –0.87% (-2.56), –2.01% (-4.82), and –1.68% (-4.95), respectively. These results support hypothesis H1 indicating that the market places significant weight on whisper forecasts. However, when the actual EPS meets/beats whisper but not analyst forecasts (subsample 2), the results are inconclusive. While these results support part of the joint hypothesis H1, there is no support for H2.

[***] The relatively small size of subsample 2 (N=28) may influence the statistical power of testing our hypotheses.
[†††] We also estimate the Scholes-Williams abnormal returns using the value-weighted portfolio [see Scholes and Williams (1977)] and the non-parametric rank-sign test consistent with Corrado (1989) and Corrado and Zivney (1992). The results (not reported here) are consistent with the market adjusted abnormal returns presented in this study.

If the firms' actual EPS does not meet both whisper and analyst forecasts, we find significant negative CARs only after announcements, where CAR(0,+1), CAR(0,+2), and CAR(+1,+2) equal –2.41% (-3.26), –4.90% (-5.42), and –4.27% (-5.78), respectively. Finally, when the actual EPS meets/beats both whisper and analyst forecasts, the CARs are positively significant before and after announcements. The pre-announcement CARs are 0.68% (2.22) for CAR(-2,-1), 1.13% (3.01) for CAR(-2,0), and 0.78% (2.54) for CAR(-1,0). The post-announcement CARs are 0.75% (2.45) for CAR(0,+1), 1.04%(2.76) for CAR(0,+2), and 0.59% (1.92) for CAR(+1,+2). The buy-hold cumulative abnormal returns (BHCAR) reported in Panel C of Table 3 also exhibit similar findings.

Regression Analysis

A regression analysis is utilized to examine the relationship between the six independent variables (SFE, SWE, and the four subsamples) and CAR, as specified by equation (4). First, a cross-sectional regression is conducted using the pre-announcement cumulative average abnormal return, CAR(-2,-1), to examine whether information leakage exists and whether investors react to it. A second regression using the post-announcement cumulative average abnormal return, CAR(+1,+2) is also analyzed. The results are presented in Table 4.

During both the pre- and post-announcement periods, SWE is statistically significant at the 10% level while SFE is not. The marginal significance of SWE provides evidence that investors react to whispers prior to and after announcement, but not to analyst forecasts. Furthermore, we find that the firms that meet/beat analyst but not whisper forecasts (subsample 1 or D1) exhibit a significantly lower post-announcement CAR(+1,+2) of –2.0%. This partially supports the joint hypothesis H1 indicating that investors respond more forcefully to whisper forecast errors than analyst forecast errors during the post-announcement period. Subsample 2, however, which represents firms that meet/beat whisper but not analyst forecasts (D2) is statistically insignificant. With support of the market reacting more strongly to whispers than to analyst forecasts from subsample 1 and inconclusive, results from subsample 2 provide some evidence in support of hypothesis H1, but not H2.

We also find that firms that do not meet both analyst and whisper forecasts exhibit 4.4% statistically significantly lower CAR(+1,+2). These findings indicate that the market reaction to negative whisper and analyst forecast errors occur only during the post-announcement period. The constant term is positive and significant during the pre-announcement period, indicating that positive information leakage occurs.[‡‡‡]

In summary, the regression results show that the market reaction is closely correlated with SWE, but not SFE. When there is a conflict between whisper and analyst forecast errors, the market appears to use whispers as their guide.

[‡‡‡] The regression results on the buy-hold cumulative abnormal returns (BHCAR) prior to announcement (BHCAR(-2,-1)) and after announcement (BHCAR(+1,+2)) show similar results to the cumulative abnormal returns (CAR) presented in Table 4.

Trading Strategy using Whisper and Analyst Forecasts

A portfolio is constructed that represents three of four possible cases incorporating the scenario where conflicts between whispers and analysts arise. This portfolio consists of a short position in subsample 1 (actual EPS meets/beats analyst but not whisper forecasts), a short position on subsample 3 (actual EPS does not meet both whisper and analyst forecasts), and a long position on subsample 4 (actual EPS meets/beats both whisper and analyst forecasts). The portfolio does not contain subsample 2 (when actual meets/beats whisper, but not analyst forecasts) since the cumulative abnormal returns (CARs and BHCARs) for subsample 2 are not statistically significant. Two benchmark portfolios are also employed. One relies on analyst forecasts only and the other, on whispers only. Timing between whisper and analyst forecasts is not an issue in our study because we create the portfolio for forecasts on the day of announcement (relative Day 0), as we expect investors to react to the forecast errors on Day 0 after the actual EPS announcement is made.[§§§]

Table 5 presents the CAR and BHCAR for the constructed and benchmark portfolios. BBW compare the benchmark portfolios (Columns (2) and (3) of Table 5), and conclude that whispers contain information not contained in analyst forecasts. Our study shows that a portfolio using both forecasts (Column (1) of Table 5) exhibits larger CARs than the analysts-only portfolio as well as the whispers-only portfolio. While BBW find that whispers provide information that is not in the analyst forecasts, we find that analyst forecasts contain information not contained in whispers, showing that one does not subsume the other.

Examining a two-day window from two days after announcement, the CAR(+1,+2) of the constructed portfolio is 6.54% in excess of the market return. The portfolio return for the three-day window produces a CAR(0,+2) of 7.95% in excess of the market return.[****] If investors rely only on analyst forecasts, however, and take a long position when SFE ≥ 0 and a short position when SFE<0, CAR(+1,+2) equals 2.28% and CAR(0,+2) equals 2.83%, respectively. The portfolio abnormal returns, therefore, are 4.26% to 5.12% greater than the analyst-only benchmark portfolio.

Next, whispers are used as the benchmark portfolio comprised of taking a long position when SWE ≥ 0 and a short position when SWE<0. Column (3) of Table 5 shows that CAR(+1,+2) and CAR(0,+2) of the benchmark portfolio equal 3.01% and 3.56%, respectively. The constructed portfolio's cumulative abnormal returns are 3.53% to 4.39% more than a strategy that relies only on whispers. These findings imply that investors could potentially earn significantly higher abnormal returns of 3.53% to 5.12% using a combination of whisper and analyst forecasts.

Using a similar trading strategy for BHCAR, significantly higher abnormal returns are found for BHCAR(+1,+2) and BHCAR(0,+2) ranging from 3.74% to 5.39%. The BHCAR results are similar to the CAR results. This shows that whisper and analyst forecast errors contain different

[§§§] Our study does not address the issue of the difference in timing of release for the analyst and whisper forecasts. Timing of forecasts does not affect our study because we examine the market reaction from the announcement date (Day 0) and thereafter.

[****] If investors can implement the strategy on the day of announcement, the CAR((0,+2) can be earned. If they invest one day after announcement, they could still earn CAR(+1,+2).

information. To maximize a portfolio return, an investor should use both forecasts; when the forecast errors conflict, investors should use whispers as their guide.

V. Conclusion

This study examines how the market reacts to conflicting signals given by whisper and analyst forecast errors. By dividing the sample into subsamples, we find that the market response is significantly negative for firms with actual EPS that meets/beats the analyst but not the whisper forecasts. Furthermore, the significant market response occurs up to two days after the earnings announcement. There is no statistically significant reaction, however, over the pre- and post-announcement periods when the actual EPS meets/beats whisper but not the analyst forecast.

The regression shows that the post-announcement CARs and whispers are strongly correlated, but CARs and analyst forecasts are not. Moreover, when the firms meet/beat analyst but not whisper forecasts, the post announcement CAR is significantly lower. Furthermore, the whisper forecast errors (SWE) are consistently significant in pre- and post-announcement CAR regressions while the analyst forecast errors (SFE) are not. These results provide evidence that when a conflict arises between whispers and analysts, the market reaction to whispers is stronger than its reaction to analysts.

The portfolio that uses both whispers and analyst forecast errors generates significantly greater abnormal returns in excess of 3.53% up to 5.39% from the analyst-only portfolio or the whispers-only portfolio. The larger abnormal returns are not only statistically significant, but economically significant. Moreover, the fact that investors can earn significant abnormal returns up to two days *after* the earnings releases adds to the value of using both forecast errors. This implies that the combined forecast errors provide information to the market even after the earnings announcements, and neither forecast subsumes the other. If a conflict arises, however, between the whispers and analyst forecast errors, the market appears to react more strongly to whispers forecast errors. Hence, to maximize portfolio returns investors should use both forecast errors, and when a conflict arises let whispers be their guide.

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Table 1: Descriptive Statistics for Sample Firms

This table presents the summary statistics for 136 firms during 1999-2002. All firms' characteristics reported in this table are annual. Total assets, market value of equity, net sales, and net income are stated in millions of dollars. Total shares outstanding is stated in millions of shares. Sales growth and stock return are stated in percent. ROA (return-on-assets) is calculated as net income divided by total assets. The stock price is stated in dollars per share. The stock beta is calculated using the capital asset pricing model of daily returns in one year. Leverage is calculated as total debt divided by total assets.

	Mean	Median	Std. Dev.
Total assets ($ million)	38,989	6,965	98,916
Market value of equity ($ million)	44,713	15,092	74,983
Net sales ($ million)	16,450	5,380	27,781
Net income ($ million)	1,096	255	2,697
Total shares (million shares)	1,074	424	1,526
Sales growth (%)	38	13	134
Stock return (%)	21.32	12.82	103.23
ROA	0.03	0.05	0.52
Stock Price ($ per share)	40.51	33.20	43.73
Beta	1.38	1.26	0.78
Leverage	0.20	0.17	0.21

Table 2: The Distribution of Actual EPS, EPS Forecasts and Forecasts Errors

This table presents the distribution, mean and standard deviation of actual earnings per share (EPS), analyst and whispers forecasts, and forecast errors from the analysts and the whispers. EPS is stated in dollars per share. The UFE is the unscaled analyst forecast error defined as (actual EPS - Analyst forecast). The UWE is the unscaled whisper forecast error defined as (actual EPS - Whisper forecast). The SFE is the scaled analyst forecast error defined as (actual EPS - Analyst forecast)/|actual EPS|. The UWE is the scaled whisper forecast error defined as (actual EPS - Whisper forecast)/|actual EPS|. The number of observations (N) of actual EPS, analyst EPS, and whisper EPS change due to missing value. The number of observations for the scaled forecast errors (SFE and SWE) is different from the number of observations for the unscaled forecast errors (UFE and UWE) because some of the actual EPS values are equal to zero.

Percentiles	Actual EPS	Analysts EPS	Whisper EPS	UFE	UWE	SFE	SWE
5%	-0.30	-0.31	-0.24	-0.03	-0.10	-0.17	-0.67
10%	-0.10	-0.10	-0.06	-0.01	-0.06	-0.04	-0.33
25%	0.09	0.08	0.09	0	-0.02	0	-0.09
50%	0.25	0.24	0.24	0.01	0	0.03	0
75%	0.46	0.44	0.41	0.02	0.02	0.10	0.08
90%	0.68	0.67	0.67	0.05	0.06	0.26	0.25
95%	0.89	0.88	0.91	0.08	0.09	0.50	0.43
Mean	0.26	0.26	0.27	0.01	-0.01	0.09	-0.07
Std. Dev.	0.38	0.34	0.33	0.11	0.15	0.96	1.13
N	1580	1555	1014	1542	1013	1531	1006

Figure 1: The Distribution of the Scaled Analyst and Whisper Forecast Errors

This figure shows the frequency distribution of the scaled analyst forecast errors (SFE) and the scaled whisper forecast errors (SWE) across 136 firms during twelve quarters of 1999-2002. The vertical axis represents the percentage of frequencies (%) and the horizontal axis represents the scaled forecast errors.

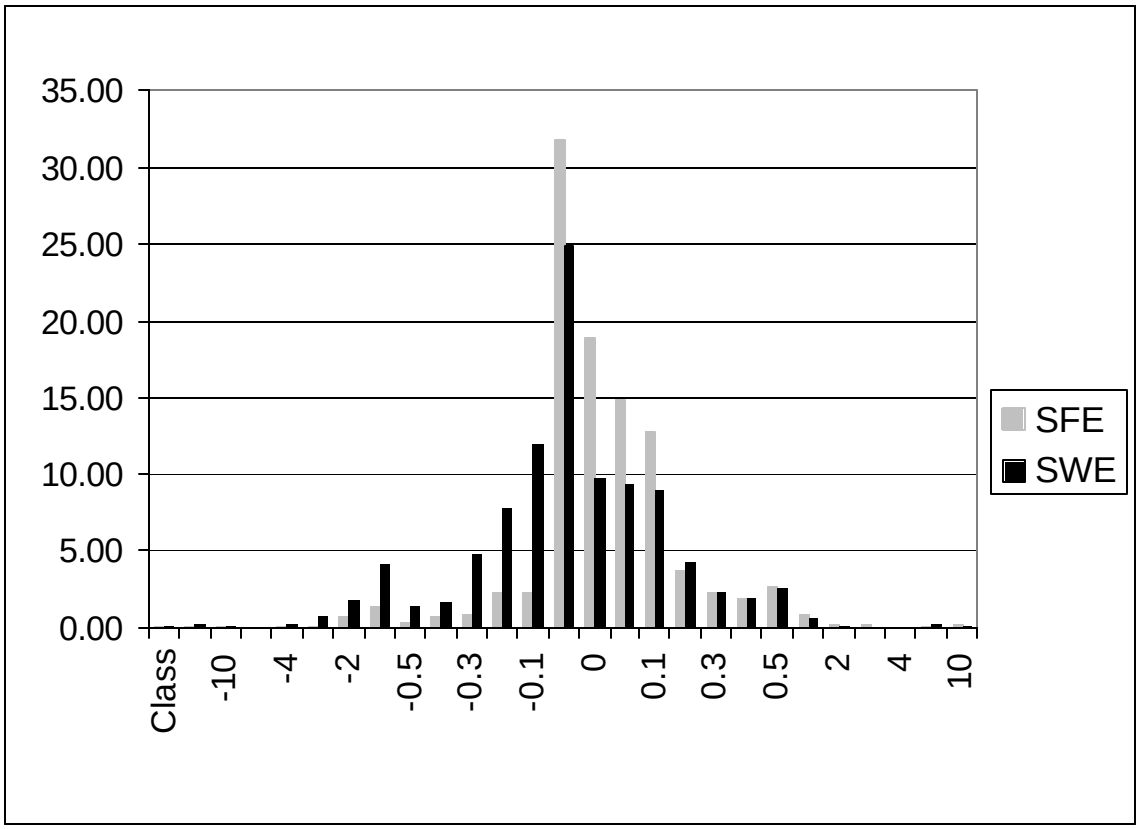

Table 3: The AARs and CARs for Subsamples

This table presents the average abnormal returns (AARs), the cumulative abnormal returns (CARs), and the buy-hold CARs (BHCARs) for four subsamples: (1) actual EPS meets/beats analyst forecast, but not whispers (SFE ≥0 and SWE <0); (2) actual EPS meets/beats whispers, but not analyst (SFE <0 and SWE ≥0); (3) actual EPS does not meet both analyst and whisper forecasts (SFE<0 and SWE<0); and (4) actual EPS meets/beats both analyst and whisper forecasts (SFE ≥0 and SWE ≥0). The total number of observations is reduced to 952 firms-quarters due to missing values of SFE or/and SWE. The t-statistic is presented in the parenthesis. *, ** and *** indicate significance at 10%, 5%, and 1% levels, respectively.

Panel A: Average Abnormal Returns (AARs)

Events	SFE ³ 0, SWE <0	SFE <0, SWE ³ 0	SFE<0, SWE<0	SFE ³ 0, SWE ³ 0
-2	0.24%	-0.52%	0.41%	0.48%
	(1.00)	(-0.62)	(0.79)	(2.40)**
-1	0.04%	-0.40%	0.47%	0.42%
	(0.17)	(-0.47)	(0.89)	(2.10)**
0	-0.32%	-0.79%	-0.64%	0.53%
	(-1.34)	(-0.94)	(-1.22)	(2.64)***
1	-0.55%	-0.22%	-1.78%	0.34%
	(-2.27)**	(-0.26)	(-3.40)***	(1.72)*
2	-1.14%	0.72%	-2.50%	0.44%
	(-4.73)***	(0.86)	(-4.78)***	(2.18)**

Panel B: Cumulative Abnormal Returns (CARs)

Windows	SFE ³ 0, SWE <0	SFE <0, SWE ³ 0	SFE<0, SWE<0	SFE ³ 0, SWE ³ 0
(-2,-1)	0.28%	-0.91%	0.87%	0.68%
	(0.83)	(-0.77)	(1.19)	(2.22)**
(-2,0)	-0.03%	-1.69%	0.24%	1.13%
	(-0.09)	(-1.17)	(0.27)	(3.01)***
(-1,0)	-0.28%	-1.18%	-0.16%	0.78%
	(-0.82)	(-1.00)	(-0.23)	(2.54)**
(0,+1)	-0.87%	-1.00%	-2.41%	0.75%
	(-2.56)***	(-0.85)	(-3.26)***	(2.45)**
(0,+2)	-2.01%	-0.28%	-4.90%	1.04%
	(-4.82)***	(-0.20)	(-5.42)***	(2.76)***
(+1,+2)	-1.68%	0.49%	-4.27%	0.59%
	(-4.95)***	(0.42)	(-5.78)***	(1.92)*

Panel C: Buy-Hold Cumulative Abnormal Returns (BHCARs)

Windows	SFE ³ 0, SWE <0	SFE <0, SWE ³ 0	SFE<0, SWE<0	SFE ³ 0, SWE ³ 0
(-2,-1)	0.26%	-0.91%	0.90%	0.92%
	(0.79)	(-0.78)	(1.22)	(3.26)***
(-2,0)	-0.11%	-1.79%	0.21%	1.40%
	(-0.27)	(-1.24)	(0.24)	(4.05)***
(-1,0)	-0.30%	-1.21%	-0.19%	0.91%
	(-0.88)	(-1.03)	(-0.26)	(3.22)***
(0,+1)	-0.86%	-1.00%	-2.47%	0.90%
	(-2.54)**	(-0.85)	(-3.35)***	(3.19)***
(0,+2)	-2.02%	-0.39%	-4.98%	1.24%
	(-4.84)***	(-0.27)	(-5.50)***	(3.59)***
(+1,+2)	-1.66%	0.44%	-4.33%	0.77%
	(-4.88)***	(0.38)	(-5.87)***	(2.72)***
Observations	348	28	92	486

Table 4: Regression for CARs Surrounding Earnings Announcements

This table presents the regression analyses of two days cumulative abnormal returns (CARs) prior and after the actual EPS announcements. The columns utilize regression model:

$$CAR(T_1,T_2)_{i,t} = \gamma_0 + \eta_1 SFE_{i,t} + \eta_2 SWE_{i,t} + \eta_3 D1_{i,t} + \eta_4 D2_{i,t} + \eta_3 D3_{i,t} + \upsilon_{i,t}$$

The dependent variables are CAR(-2,-1) and CAR(+1,+2). SFE is scaled forecast errors for analysts and SWE is scaled whispers errors. D1 is a dummy variable that takes a value of one if SFE ≥0 and SWE <0, and zero otherwise. D2 is a dummy variable that takes a value of one if SFE <0 and SWE ≥0, and zero otherwise. D3 is a dummy variable that takes a value of one if SFE <0 and SWE <0, and zero otherwise. Robust t-statistics are in parentheses. The number of observations for the regression is reduced to 952 firms-quarters due to missing values. *, ** and *** indicate the significance at 10%, 5%, and 1% levels, respectively.

	CAR(-2,-1)	**CAR(+1,+2)**
SFE	0.004	-0.002
	(1.24)	(0.45)
SWE	0.005	0.007
	(1.70)*	(1.75)*
D1	-0.0003	-0.020
	(0.08)	(2.73)***
D2	-0.010	0.003
	(0.87)	(0.22)
D3	0.010	-0.044
	(1.23)	(3.15)***
Constant	0.007	0.007
	(2.46)**	(1.46)
Observations	952	952
R-squared	0.019	0.26

Table 5: Portfolio CARs during the Post-Announcement Period

This table presents the cumulative abnormal returns from using both analyst and whisper forecasts compared to cumulative abnormal returns from a benchmark portfolio using only analyst forecasts or only whispers. The portfolio constructed for Column (1) contains a short position on subsample 1 (when actual EPS meets/beats analyst forecast, but not whisper), a long position on subsample 4 (when actual EPS meets/beats both whisper and analyst forecast) and a short position on subsample 3 (when actual EPS does not meet both whisper and analyst forecast). Column (1) CARs use the cumulative abnormal returns from subsamples 1, 3, and 4 presented in Table 3. Column (2) presents CARs for a benchmark portfolio when investors rely only on analyst forecasts by taking a long position when SFE ≥ 0 and a short position when SFE<0. Column (2) CARs use the cumulative abnormal returns for SFE ≥ 0 and SFE<0. Column (3) presents CARs for a benchmark portfolio when investors only rely on whispers by taking a long position when SWE ≥ 0 and a short position when SWE<0. Column (3) CARs use the cumulative abnormal returns for SWE ≥ 0 and SWE<0. Column (1)–(2) indicates the difference in CARs between portfolio (1) and a benchmark portfolio formed by relying on analyst forecasts only (2). Column (1)–(3) indicates the difference in CARs between our portfolio (1) and a benchmark portfolio formed by relying on whispers only (3). t-statistics are presented in the parenthesis. *, ** and *** indicate the significance at 10%, 5%, and 1% levels, respectively. The number of observations for each of the column is the same as in Table 3.

Holding Periods	(1)	(2)	(3)	(1) - (2)	(1) - (3)
CAR (+1,+2)	6.54%	2.28%	3.01%	4.26%	3.53%
	(4.72)***	(3.68)***	(5.36)***	(2.13)**	(1.81)*
CAR(0,+2)	7.95%	2.83%	3.56%	5.12%	4.39%
	(4.68)***	(3.70)***	(5.17)***	(2.08)**	(1.84)*
BHCAR(+1,+2)	6.76%	2.35%	3.02%	4.41%	3.74%
	(4.97)***	(3.76)***	(5.38)***	(2.22)**	(1.96)**
BHCAR(0,+2)	8.24%	2.85%	3.52%	5.39%	4.72%
	(4.94)***	(3.74)***	(5.12)***	(2.21)**	(2.00)**