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How Stock Market Reacts to Guidance Revisions and Actual Earnings Surprises

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Abstract—According to the existing literature, companies manage analysts' expectations of their future earnings by issuing pessimistic earnings guidance to meet the expectations. Consequently, one could expect that markets price this pessimistic bias in advance and penalize companies more for lowering the guidance than reward for beating the guidance. In this paper we confirm this empirically. In addition we show that although guidance revisions have a statistically significant relation to stock returns, that is not the case with the actual earnings surprise. Reason for this could be that, after the annual earnings report also information on future earnings power is given at the same time.

Keywords—Management guidance, earnings guidance, pessimistic bias.

I. Introduction

MANAGERS of publicly enlisted companies seek to avoid quarterly losses, reduced earnings, and negative surprises about earnings [1]. However, the relative importance of these three goals has been changing over the years [2]. For example, in the 1980's, managers sought mostly to avoid decreasing earnings and least negative earnings surprises. But in recent years, the relative weight of these goals has been reversed because capital markets now reward (penalize) firms that report better (lower) than expected results [2]. Consequently, companies have changed their focus on meeting or beating expectations. Another important reason for companies to avoid negative earnings surprises is that they are more likely than before to face legal consequences after sudden drops in earnings [3], [4].

Companies can avoid earnings surprises in two ways. They can either try to manage earnings by using various legitimate accounting practices to match the expectations, or they can try to manage expectations to match their earnings [5], [6]. In the late 1980's and early 1990's, companies used to manage their earnings upwards when they were about to fail the given guidance. Such earnings management was asymmetric because companies did not then, conversely, manage their earnings downward when they were to exceed their guidance [7]. The practice also caught regulators' attention, and in 1999 the SEC issued the Staff Accounting Bulletin No. 99, warning that even small earnings manipulation could lead to sanctions [8]. On the other hand, expectations management is a relatively new phenomenon. According to [9] the median in earnings surprise has shifted from missing analyst expectations to beating them in the period between 1984 and 1999. In addition, according to [9] surprises were not symmetric: when companies beat analyst expectations, they tended to do so just barely, but when they missed the estimates, they missed it significantly.

Currently, companies attempt to project expectations that will meet actual earnings or slightly exceed analyst expectations. This shift has in recent years produced a vast amount of research, according to which analysts expectations at the beginning of periods tend to overestimate earnings but toward the end to underestimate realized earnings [3], [4], [10]. References [3] and [11] found that by issuing pessimistic earnings guidance, managers can influence analyst expectations downward and produce a positive earnings surprise at the end of a period. According to [11], analysts do not simply repeat the guidance given by management but to some extent act independently, yet lower their expectations to an attainable level. Reference [3] offers a pragmatic explanation why analysts tend to accept management's pessimistic guidance: they have an incentive to go along with the management's guidance so that their own employer companies would not lose future business with them.

In this study, we examined how stock market reacts to *guidance revisions* and *actual surprises*. [1] As said, earnings guidance is pessimistic because under any circumstances managers strive to meet or even beat analysts' and market's expectations by the end of the financial period. Our approach differs in several ways from the current literature, which largely focuses on stock price reactions relative to *analyst's* consensus estimates see, e.g. [4], [12]. We focused on stock price reaction relative to *companies'* own guidance.

Some research has been done on stock price behavior upon companies' earnings announcements. References [13] and [14] found that stock prices are more volatile during the weeks companies announce their earnings, but they did not investigate the differences between reactions to guidance revisions and actual surprises. Some research has also been done on how voluntary disclosure affects stock prices. According to [15] companies are more likely to make preannouncements when they expect failure to meet their guidance. In addition, [15] concludes that when a preannouncement is bad news, stock prices on average fall. Our study also differs from [15] in that it focused on voluntary, irregular preannouncements whereas we focused on regular guidance by management. In addition, our data is much more recent than that in the above references.

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[1] We examine companies that give earnings guidance only on annual earnings at the same time they release their quarterly earnings release. Guidance revision means the change in the company's guidance compared to the previous quarter. Surprise on the other hand means the difference between the actual earnings and the last guidance.

Our study differs from earlier studies also in that we used quarterly guidance on annual earnings. Usually, the data used is quarterly earnings estimates e.g., [3], [10], [11] but we chose to use quarterly guidance on annual earnings. Focusing on companies that provide guidance on annual earnings every quarter makes it possible to compare the stock market reaction between guidance revision and actual earnings surprise. In the fiscal fourth quarter (Q4), the company gives its initial guidance on the next fiscal year's EPS. Then, in each quarter (Q1 to Q3), the company reviews its guidance; that is, though guidance is annual, it is reviewed quarterly. Then after Q4 we know whether the company has met the given guidance. When a company provides guidance on earnings (or earnings per share), it can forecast quarterly earnings, annual earnings, or both. However, companies are not always consistent with their quarterly earnings forecasts and may temporarily or even for long periods stop providing regular forecast reports. For the homogeneity of our data, we focused only on companies that provide regular, annual guidance quarterly.

When firms announce their actual earnings after the fiscal year, a lot of information on prospects for future earning power is given at the same time. We postulate that this information on prospects can be even opposite to earnings surprise and can dominate information on the current earnings, especially with growth companies. Consequently, whereas an asymmetric reaction on guidance revisions is expected to be clearly identifiable from the data, markets' reactions on earning surprises are expected to be negligible and/or statistically insignificant.

Based on the above, we formulated the following hypotheses:

Hypothesis 1. Markets penalize companies more for lowered earnings guidance than reward them for increased guidance

Hypothesis 2. Markets do not react on earnings surprise strongly.

Moreover, we postulated that filtering out systematic risk improves results:

Hypothesis 3. When correlation with the market portfolio is taken into account (i.e., when returns are adjusted with beta coefficients), R^2 measures (the goodness of fit) increase, and parameter estimates become more significant.

The rest of the paper is organized as follows: in section 2, we introduce our data and in section 3 describe our research methodology. In section 4 we present our results, and, finally, in section 5 summarize and conclude our research.

II. Data

For data, we used companies' earnings guidance data obtained from SEC's electronic Edgar database. For our initial sample, we chose randomly 100 or 20 % of all S&P 500 companies.[2] Of these companies, we selected only those providing annual earnings guidance quarterly, which reduced our selection to 21 companies or 4.2 % of all S&P 500 companies, i.e., to 21 % of our initial sample. The data was obtained by going through companies' earnings releases (SEC filing 8-K). Altogether, our data consisted of 411 data points over 2005 – 2010. Divided into fiscal quarters, the data becomes 103, 104, 104 and 100 points between Q1 and Q4, respectively.

As said before the data from Q1 to Q3 is one set and data from Q4 is the other. Because our chosen companies provide annual guidance quarterly, we knew whether they raised, lowered, or maintained their guidance after their Q1 – Q3 earnings announcements. Then after Q4 we know whether the guidance has been met. Chosen companies give guidance for the next fiscal year after Q4 and this guidance is embedded in Q1 data as we calculate the change in guidance between initial Q4 guidance and revised Q1 guidance.

The companies we studied provide guidance as they report their quarterly earnings. We omitted the preannouncements some companies make when they expect failure to meet their given guidance [15], [16] and examined only the information reported in actual earnings releases. We expected this approach not to affect our results since preannouncement information was concurrently available in the earnings releases and also in the stock prices when we studied them [17].

The data we collected contained, in addition to earnings guidance, realized EPS and realized revenue (for a given quarter). We included these to be able to test whether the finding by [2] showed in our data; that is, whether investors are more concerned about surprises than changes in earnings.

Normally, companies provide guidance only on a metric called adjusted EPS or non-GAAP EPS to imply that it is different from the EPS defined by GAAP (*generally accepted accounting principles*). For that reason we have used it in our empirical section. Normally, guidance is given as a range instead of a point forecast.

Some companies attach no explicit numerical value to their guidance but state how much they expect EPS to rise over the previous year, e.g., a rise in EPS of 10% – 15 %. In such cases, we simply calculated adjusted EPS guidance. Other companies give a qualitative estimate of how much their EPS will raise or fall (e.g., they might say that their EPS will rise from low to mid teens over the previous year). These cases we converted uniformly to explicit numerical values (e.g., low to mid teens to 12 % – 15 %). Finally, our five-year data contains also some stock splits, and EPS numbers were converted to take these into account. We obtained our stock price and dividend data from Bloomberg.

III. Research methodology

Our research consisted of two parts. In the first part, we tested whether the bias observed in previous studies surfaced in guidance data by comparing how often companies raised versus lowered their earnings guidance in their earnings reports. This was done by comparing how often the guidance midpoint was raised, lowered or kept the same. After fourth quarter we compared how often the companies beat, met and failed to meet the given guidance. If their guidance was realistic, we expected companies equally likely to raise as to lower their guidance and equally likely to beat and not meat the guidance. A significant difference in their upward and downward revisions, as well as not meeting and beating, would tell us that their guidance was biased.

[2]The company list is from 3 December, 2010.

We also tested how often quarterly stock returns were positive and negative when companies raised/lowered/maintained their guidance midpoint. After Q4 we calculated the number of positive and negative returns when company had beaten, met and not met the guidance. If guidance was pessimistic, and it has significant impact on stock returns, we would expect that there would be more negative returns when the guidance is lowered than there are positive returns when the guidance is raised. We also calculated average quarterly returns after each type of guidance revision and actual surprise. If the markets were aware of the bias, we expected returns to fall more upon bad news than rise upon good news. We tested this by calculating average quarterly returns for each type of revision (Q1 – Q3 data) and actual surprise (Q4 data).

In the second part, we tested four different linear regression models (model (1) to model (4)) to see whether markets rewarded and penalized firms asymmetrically and if the market reaction was similar between guidance revisions and actual surprise. Since past research has established management guidance to be pessimistic, we expected market reaction to negative news to be stronger in absolute value, if it has statistically significant impact on returns.

With each model, we examined two types of quarterly stock returns. First, we looked at the unadjusted quarterly returns, defined as $R_t = (S_t + D - S_{t-1})/S_{t-1}$, where S_t is the stock price n days after a current earnings announcement, and S_{t-1} is the stock price m days after a previous earnings announcement and D is the cash dividend between t and $t-1$ (if there has been any). These models are denoted by (a). We also studied quarterly beta-adjusted abnormal returns, when the S&P 500 index was the market portfolio. Then $R_t = (S_t + D - S_{t-1})/S_{t-1} - \beta(I_t - I_{t-1})/I_{t-1}$, where I_j is the value of the S&P 500 index on the same day as we observed S_j. Betas were estimated from the market data. These models are denoted by (b). In our research, we chose $n = 1$ and $m = 2$, as done by [18].

The simplest model assumed that the stock returns change linearly depending on the change in the guidance information. Model (1) is thus of the form

$$R_t = \alpha_0 + \alpha_1 \Delta\text{Info}. \tag{1}$$

ΔInfo means the change in the information. After Q1 to Q3 it is defined as the change in the guidance and after Q4 the difference between the last guidance and realized earnings. After Q1 to Q3 $\Delta\text{Info} = (MP_c - MP_p)/MP_p$, where MP_c is the current midpoint of a non-GAAP EPS estimate, and MP_p is the previous guidance midpoint. Likewise after Q4 $\Delta\text{Info} = (EPS_{NG} - MP_p)/MP_p$, where EPS_{NG} is the realized EPS reported on non-GAAP basis. As noted before, companies typically provide guidance as a range rather than a point forecast. The guidance midpoint (MP) is thus the average of the upper and lower forecast bounds. If guidance is given as a point forecast, then the forecast midpoint is the point forecast. The parameter α_0 is the intercept, and α_1 is the slope coefficient. Obviously, we can conjecture that $\alpha_1 > 0$ if it is statistically significant.

In the second model, we assumed that change in the information affects stock returns asymmetrically; hence model (2) reads

$$R_t = \alpha_0 + \alpha_1\xi_1\Delta\text{Info} + \alpha_2\xi_2\Delta\text{Info}, \tag{2}$$

where

$$\xi_1 = \begin{cases} 1 & \text{if } \Delta\text{Info} > 0 \\ 0 & \text{if } \Delta\text{Info} \leq 0. \end{cases}$$

and

$$\xi_2 = \begin{cases} 0, & \text{if } \Delta\text{Info} > 0 \\ 1, & \text{if } \Delta\text{Info} \leq 0. \end{cases}$$

The second model allowed us to examine similarity between reactions to positive and negative surprises. From past research, we expected reactions to negative revisions to be stronger than to positive revisions; therefore, we expected that $\alpha_1 < \alpha_2$ if the parameters were statistically significant.

The third model was similar to the second, except that we added a constant term for cases when there has been no change in the information. This allowed us to analyze markets reactions to "no news" situations. The model (3) is thus

$$R_t = \alpha_0 + \alpha_1\xi_1\Delta\text{Info} + \alpha_2\xi_2\Delta\text{Info} + \alpha_3\xi_3, \tag{3}$$

where ξ_1 and ξ_2 are as above, except that the cases $MP_c - MP_p = 0$ and $EPS_{NG} - MP_p = 0$ do not belong to ξ_1 nor ξ_2. Instead $\xi_3 = 1$, when $MP_c - MP_p = 0$ or $EPS_{NG} - MP_p = 0$, and otherwise zero. We expected that $\alpha_3 < 0$ as markets would penalize firms if they did not raise their guidance or meet the guidance at the end of the fiscal year.

The fourth model we considered takes into account also change in realized GAAP and non-GAAP EPS and sales compared to the same quarter a year earlier. Model (4) is of the form

$$\begin{aligned} R_t &= \alpha_0 + \alpha_1\xi_1\Delta\text{Info} + \alpha_2\xi_2\Delta\text{Info} + \alpha_3\xi_3 \\ &+ \alpha_4\Delta EPS_G + \alpha_5\Delta EPS_{NG} \\ &+ \alpha_6\Delta\text{Revenue}, \end{aligned} \tag{4}$$

where $\Delta EPS_G = (EPS_G^c - EPS_G^p)/EPS_G^p$, and EPS_G means earnings per share as reported on GAAP basis and the superscripts signify current and previous EPS, $\Delta EPS_{NG} = (EPS_{NG}^c - EPS_{NG}^p)/EPS_{NG}^p$, with the exception to the previous that now EPS is on non-GAAP basis . $\Delta\text{Revenue} = (\text{Revenue}_c - \text{Revenue}_p)/\text{Revenue}_p$ signifies change in the percentage of revenue over the previous year. The purpose of the last model was to test if change in EPS and sales over the previous year could be the explaining factors. Because the correlation between ΔEPS_G and ΔEPS_{NG} was not strong (-0.383), we included both GAAP and non-GAAP earnings in our regression model. We expected, in accordance with the findings by [2], that change in actual earnings or sales would not be as important as change in the information.

IV. Results

A. Preliminary Analysis

First, we analyzed whether the bias reported in previous studies appeared in our data. In Table I, we report how often a company raised its earnings guidance midpoint compared

TABLE I
DESCRIPTIVE STATISTICS OF GUIDANCE REVISIONS MADE IN EARNINGS ANNOUNCEMENTS ($n = 311$) AND OF THE ACTUAL SURPRISE ($n = 100$).

Panel A: Earnings guidance revisions

Type of adjustment	Observations in total	Observations in Q1	Observations in Q2	Observations in Q3
Raised	144 (46.3%)	39 (37.9%)	47 (45.2%)	58 (55.8%)
Maintained	103 (33.1%)	50 (48.5%)	35 (33.7%)	18 (17.3%)
Lowered	64 (20.6%)	14 (13.6%)	22 (21.2%)	28 (26.9%)

Panel B: Actual surprise

Meat or beat	Observations
Above the range	52 (52%)
In the range	38 (38%)
Below the range	10 (10%)

to a previous quarter. In addition we reported how often the company was able to beat and not meet the guidance.

Table I shows that companies raised their earnings guidance more often than they lowered it. This means that pessimistic bias, as reported, e.g., by [3] and [10], appears in our data. The percentage of raising the midpoint is significantly higher than that of either lowering or maintaining it (at 1 % significance level).[3] Moreover, the Table I shows that in their first guidance revision, companies are unlikely to change their initial guidance (48.5 % of the times). Towards the end of the fiscal year, the percentage of up- and downward revisions seems to increase. After Q3 earnings announcements, only 17.3 % of companies retained their guidance as it was after the Q2 earnings announcement. But as can be seen, there are percentagewise significantly more upward than downward revisions in each quarter. We also tested how the latest guidance reflected realized earnings. In 52 % of cases, companies beat their post-Q3 guidance and failed it only in 10 % of cases. The percentage of beating the guidance is significantly higher than meating or failig to meet the guidance (at 1 % significance level). So although companies revise their guidance upward throughout the fiscal year, realized earnings yet beat the latest guidance more often than not.

To assess how investors take the above into account, we first tested how often quarterly returns are positive when a company has raised, lowered or maintained their guidance (i.e., we tested how stock prices reacted to raising, lowering and maintaining the earnings estimate). We did the same thing when the guidance was beaten, met and not met. Table II shows how often company returns were positive and negative in the above cases. When we look at the guidance revisions (Q1 – Q3 data) we see that returns were more often positive than negative when the guidance midpoint was raised (at 1 % significance level). When the midpoint remained the same, the percentage of negative returns was greater than that of positive returns (at 5 % level). We expected this, given that guidance was assumed biased. When guidance was lowered, returns were more often negative than positive (significant at 1 % level). What is more interesting is that percentage of *up-up* paths (guidance raised and positive returns) is not significantly different from *down-down* paths (guidance lowered and negative returns). We expected that percentage of down-down paths would have been grater than up-up paths, since the guidance is pessimistic.

When we look at the returns after Q4 the results are quite different. When the guidance has been beaten the unadjusted and beta adjusted returns have been positive in 55.77% and 67.33% of the cases, respectively. With beta adjusted returns the percentage of positive returns is significantly greater than percentage of negative returns (at 1 % significance level). With unadjusted returns the percentage of negative and positive returns is not statistically different. When the guidance has been met the returns are more often positive than negative. This is opposite to the reaction after guidance revisions. When the guidance had not been met the percentage of positive and negative returns is the same. These results are in accordance to our prediction that after Q4 the actual earnings surprise is not as significant driver as guidance revision is after Q1 – Q3.

Next, Table III shows average unadjusted and beta adjusted abnormal returns for each of the three cases for both data sets. As can be seen from panel A, the mean unadjusted returns and beta adjusted abnormal returns are slightly higher in absolute value for lowered guidance, but the differences are not significant at any conventional levels.[4] This is in contrast to findings by [15], who concluded that bad news affects abnormal stock returns more than good news. Differences in the data used may here explain the differences in results. For data, we used regularly given management guidance whereas [15] used preannouncements. According to [19], sparsely given forecasts add more uncertainty to markets than regular ones. Therefore, the difference in our results could be due to this finding by [19]. In addition, our mean value test did not take into account the possibility that positive and negative guidance revisions may vary in magnitude. From panel B we see that the results are again quite different for the Q4 data. Whether the company has met the guidance or not, the average returns is positive. This implies that actual surprise is not that significant factor in stock returns.

B. Regression Analysis Results

To test whether the guidance revisions and actual earnings surprises have a significant effect on stock price returns we tested four different regression models with two different data sets. Table IV shows the results of our regression analysis

[3]We used the test of proportions.

[4]We used the two-tailed t-test.

TABLE II
DESCRIPTIVE STATISTICS OF QUARTERLY RETURNS CLASSIFIED BY TYPE OF EARNINGS GUIDANCE REVISION AND ACTUAL SURPRISE.

Panel A: Sign of unadjusted quarterly returns

	Guidance revisions		Actual surprise	
	+	−	+	−
Midpoint raised/Beat the guidance	105 (72.92%)	39 (27.08%)	29 (55.77%)	23 (44.23%)
Midpoint maintained/In the range	46 (44.66%)	57 (55.34%)	24 (63.16%)	14 (36.84%)
Midpoint lowered/Guidance not met	22 (34.38%)	42 (65.62%)	5 (50.00%)	5 (50.00%)

Panel B: Sign of beta-adjusted abnormal returns

	Guidance revisions		Actual surprise	
	+	−	+	−
Midpoint raised/Beat the guidance	97 (67.36%)	47 (32.64%)	35 (67.31%)	17 (32.69%)
Midpoint maintained/In the range	49 (47.57%)	54 (52.43%)	25 (65.79%)	13 (34.21%)
Midpoint lowered/Guidance not met	22 (34.38%)	42 (65.62%)	5 (50.00%)	5 (50.00%)

TABLE III
DESCRIPTIVE STATISTICS OF MAGNITUDE OF UNADJUSTED AND BETA-ADJUSTED ABNORMAL RETURNS

Panel A: Earnings guidance revisions

Type of adjustment	Average unadjusted return	Average beta-adjusted abnormal return
Raised	0.0639	0.0446
Maintained	0.0014	−0.0111
Lowered	−0.0674	−0.0494

Panel B: Actual earnings surprise

Actual surprise	Average unadjusted return	Average beta-adjusted abnormal return
Beat the guidance	0.0196	0.0421
Met the guidance	0.0270	0.0438
Failed to meet the guidance	0.0417	0.0289

for equations (1)–(4) with the data from Q1 to Q3. Table (V) shows the results of our regression analysis with the data from Q4.

Model (1) was the simplest and capable of explaining the results almost as well as other more complex models with the Q1 – Q3 data. Model (1) had the greatest adjusted R^2 measure when we used unadjusted return. When those obtained using beta-adjusted returns were compared, model (3) had the greatest adjusted R^2 measure, but not significantly different from that of model (1). In model (1), the slope coefficient α_1 was significant at 1 % level whereas the constant α_0 was not significant at any conventional significance level. When we look at the results with Q4 data in table (V) we see that the R^2 and adjusted R^2 measures are close to zero. The parameter α_1 is not significant at any conventional level.

Model (2) helped us study separately market reactions to good and bad news. With Q1 – Q3 data parameters α_1 and α_2 were both significant at 1 % level, whether we used unadjusted or beta adjusted returns. As in model (1), the constant α_0 was not significant at any conventional level. More interesting is that, as we predicted, $\alpha_2 > \alpha_1$. This means that stock returns are affected more by negative than positive news. This implies that markets anticipate companies to exceed their own expectations because they punish companies more when they revise their guidance downward than they reward companies when they raise their guidance. Results with the data from Q4 are similar to the ones with model (1). The R^2 measures are close to zero and parameters α_1 and α_2 are not significant at any conventional level.

The third model helped us study the outcome of no news situation. As in previous models with Q1 – Q3 data, parameters α_1 and α_2 were again significant, though α_1 was only significant at 5 % level in model (3a). The parameter α_2 was significant at 1 % level in both (3a) and (3b) models. In model (3b), also the parameter α_3 was significant at 5 % level, and, as we predicted, $\alpha_3 < 0$. In model (3a), the parameter α_3 was not significant at any conventional level, but its sign was negative, as we predicted. A negative sign means that when earnings guidance remains unchanged, stock prices fall, which again implies that markets anticipate companies to raise their guidance and view ”no earnings news as bad news”. With the Q4 data the results are again as before and none of the parameters α_1, α_2 or α_3 are significant.

With the fourth model, we studied whether stock returns could be affected by changes in earnings or changes in revenue. The results show that this is clearly not the case. With the Q1 – Q3 data parameters α_1 and α_2 were the only significant parameters. Now the parameter α_3 was not significant at any conventional level, but its sign was negative as in model (3), implying again that ”no news is bad news”. Parameters α_4, α_5, and α_6 were both small in absolute value and insignificant. This finding is in line with [2], who reported that markets are now more interested in how companies perform as regards expectations instead of how they perform in absolute terms.

TABLE IV
REGRESSION ANALYSIS FOR EQUATIONS (1)–(4) WHEN $n = 1$ AND $m = 2$ WITH Q1 – Q3 DATA.

	Model (1)		Model (2)		Model (3)		Model (4)	
Parameter	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
α_0	0.011	0.002	0.015	0.004	0.027^{*}	0.017	0.029	0.011
	(1.378)	(0.398)	(1.498)	(0.524)	(1.976)	(1.786)	(1.936)	(1.009)
α_1	0.924^{**}	0.726^{**}	0.806^{**}	0.679^{**}	0.668^{*}	0.524^{**}	0.673^{*}	0.525^{**}
	(6.018)	(6.659)	(3.334)	(3.955)	(2.525)	(2.802)	(2.522)	(2.795)
α_2			1.036^{**}	0.770^{**}	1.139^{**}	0.885^{**}	1.153^{**}	0.786^{**}
			(4.410)	(4.617)	(4.596)	(5.050)	(4.348)	(4.209)
α_3					-0.026	-0.029^{*}	-0.026	-0.024
					(-1.290)	(-2.041)	(-1.301)	(-1.691)
α_4							0.001	0.001
							(0.272)	(0.620)
α_5							-0.001	0.011
							(-0.033)	(0.910)
α_6							-0.020	0.038
							(-0.427)	(1.159)
R^2	0.105	0.126	0.106	0.126	0.111	0.138	0.112	0.145
R^2 (adj)	0.102	0.123	0.100	0.120	0.102	0.129	0.094	0.128

t-statistics are reported in parentheses.
* and ** denote significance at 5 % and 1 % levels, respectively.

TABLE V
REGRESSION ANALYSIS FOR EQUATIONS (1)–(4) WHEN $n = 1$ AND $m = 2$ WITH Q4 DATA.

	Model (1)		Model (2)		Model (3)		Model (4)	
Parameter	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
α_0	0.027^{*}	0.043^{**}	0.026	0.041^{**}	0.021	0.041^{**}	0.014	0.029^{*}
	(2.266)	(4.159)	(1.822)	(3.453)	(1.459)	(3.339)	(0.860)	(2.074)
α_1	-0.129	-0.023	-0.108	-0.006	-0.072	-0.007	-0.082	0.015
	(-0.623)	(-0.131)	(-0.478)	(-0.030)	(-0.319)	(-0.036)	(-0.360)	(0.076)
α_2			-0.414	-0.253	-0.581	-0.248	-0.962	-0.806
			(-0.350)	(-0.253)	(-0.489)	(-0.244)	(-0.761)	(-0.754)
α_3					0.072	-0.002	0.089	-0.010
					(1.238)	(-0.049)	(1.468)	(-0.199)
α_4							0.004	-0.005
							(0.657)	(-0.967)
α_5							-0.002	0.001
							(-0.045)	(0.016)
α_6							0.083	0.124^{*}
							(1.237)	(2.193)
R^2	0.004	$1.741e^{-4}$	0.005	$7.37e^{-4}$	0.020	$7.62e^{-4}$	0.057	0.052
R^2 (adj)	-0.006	-0.010	-0.016	-0.020	-0.010	-0.031	-0.004	-0.009

t-statistics are reported in parentheses.
* and ** denote significance at 5 % and 1 % levels, respectively.

With the Q4 data only parameter α_6 and α_0 were significant at 5 % level, other parameters were not significant at any conventional level.

The results are in line with our expectations. We expected that stock returns react asymmetrically to guidance revisions and that if the guidance is kept the same then stock returns are negative. We expected this because it has been established that companies earnings guidance is pessimistic. In addition we hypothesized that after Q4 the actual earnings surprise does not have a statistically significant impact on stock returns, due to other information that comes out at the same time. Our results also support this hypothesis, because the R^2 and adjusted R^2 measures are close to zero and parameters α_1, α_2 and α_3 were not significant in our regression analysis.

V. SUMMARY AND CONCLUSIONS

According to the literature, companies' earnings guidance tends to be pessimistic to meet or even beat analyst and market expectations of realized earnings. Such expectations management is becoming prevalent these days, and companies seek to meet analyst expectations rather than avoid losses.

Whereas previous studies have focused on the relation between earnings guidance and analyst expectations, we studied how stock markets react to companies' earnings guidance. We hypothesized that markets penalize more when firms lower their guidance than reward when they raise their guidance. Efficient markets should detect pessimistically biased guidance and reflect it in stock prices. In addition we hypothesized that actual earnings surprise does not have significant impact on stock prices, because other information may dominate the actual earnings surprise information. We tested our hypothesis by examining stock price reactions to changes in earnings guidance and actual earnings surprises during 2005 – 2011.

First, we found pessimistic bias in our data, and that companies more often raised their earnings guidance than

lowered or maintained it. In addition, although companies raise their guidance throughout the fiscal year, they still beat the latest guidance more often than not. As expected, we found that markets penalized companies more for lowering earnings guidance than they rewarded them for raising their guidance. In our regression analysis equations, the parameter α_2 was statistically significant in each case and also greater than α_1. Consistent with our hypothesis, markets view "no news" as bad news, and stock prices fall (the parameter α_3 was always negative though not significant in all cases). Using beta-adjusted returns slightly increased the measures of fit in our models with Q1 – Q3 data. Also consistent with our hypothesis, actual surprise was not statistically significant in our regression models.

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