ESSAYS ON EARNINGS GUIDANCE

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

Ihwa Yang

May 2010

ESSAYS ON EARNINGS GUIDANCE

Ihwa Yang, Ph.D.

Cornell University 2010

The first chapter of this dissertation examines the association between guidance frequency, guidance properties, and market reactions. The results suggest that the characteristics and market responses to guidance issued by occasional and frequent guiders differ. Compared to occasional guiders, frequent guiders issue guidance in a timelier manner and their guidance issuances are less optimistically biased, more accurate, and more precise. Controlling for the amount of news issued, the market reaction to guidance issued by frequent guiders is more positive for good news and less negative for bad news, consistent with market awareness of the differences in guidance properties between frequent and occasional guiders. Overall, the results are consistent with frequency being an important classificatory variable. The second chapter examines whether investors and analysts recognize differences in individual managers' guidance accuracy and bias, and if they tailor their responses to management guidance. The results suggest that investors react more strongly and assign more credibility to managers who have greater guidance accuracy, and that investors adjust for guidance bias by reacting more positively (less negatively) to good (bad) news guidance issued by managers who are more pessimistic. However, the results for the changes in analysts' consensus forecasts suggest that analyst experience plays an important role in their responses to management guidance. I find that in their forecast revisions, analysts adjust for managers' guidance accuracy and bias only if the analysts themselves have sufficient forecasting experience.

BIOGRAPHICAL SKETCH

Holly Yang is Assistant Professor of Accounting at the Wharton School of Business at the University of Pennsylvania. She received her Ph.D. from Cornell University, Master of Accounting from the University of Michigan, and B.B.A. from the National Taiwan University. Her research interests include voluntary disclosures, individual biases, and their joint effect on capital markets. She has taught Introductory Accounting to graduate students at Cornell University and currently teaches Intermediate Accounting to undergraduate students at the University of Pennsylvania. Holly is a native speaker of English, Mandarin, and Taiwanese. She enjoys running, cooking, and travelling with her fiancée in her free time.

ACKNOWLEDGMENTS

First and foremost, I would like to thank my dissertation chair, Sanjeev Bhojraj, for his continuous guidance and support. Sanjeev is one of the best mentors one could possibly have because he gives his advisees abundant freedom to explore and engage in interesting topics, yet at the same time steers them towards the right direction to pursue meaningful projects. I am extremely grateful to have had the privilege to be his advisee and co-author and will always be indebted to him for his investment in my academic career. I would also like to thank my co-authors Paul Hribar and Bob Libby. Their wealth of knowledge, constant support, and constructive criticism have also been pivotal to the accomplishment of this dissertation. Special thanks to my dissertation committee members, Julia D'Souza, Hazem Daouk, and Ming Huang, for their insightful comments and helpful suggestions.

I cannot thank my family enough for all they have done for me throughout my life. This dissertation would not be possible without their continual support and belief in me. I am also thankful to my fellow doctoral students including Flora Zhou, Nick Seybert, Kristi Rennekamp, and Young-Jun Cho. I am certain that the friendships we have developed during our time in the program will be one of my most valuable assets in my academic career. Last, but not least, Dedo, I would like to thank you for being who you are to me. Your love and words of encouragement have provided so much hope and courage and I hope that I can be as much for you as you are to me.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE:
ANALYZING GUIDANCE AT THE FIRM LEVEL: THE ASSOCIATION BETWEEN GUIDANCE FREQUENCY, GUIDANCE PROPERTIES, AND MARKET REACTIONS

Abstract

This paper argues that frequent guiders are likely to represent a class or type of firm that commits to increased levels of disclosure and therefore have different incentives and processes that affect the properties of the guidance, its market impact, and learning over time. Using earnings guidance data from Thomson First Call, we rank firms into quintiles based on guidance frequency and examine guidance properties and market participants' responses across different frequency groups. Our results suggest that the characteristics and market responses to guidance issued by occasional and frequent guiders differ. Compared to occasional guiders, frequent guiders issue guidance in a timelier manner and their guidance issuances are less optimistically biased, more accurate, and more precise. Controlling for the amount of news issued, we also find that the market reaction to guidance issued by frequent guiders is more positive for good news and less negative for bad news, consistent with market awareness of the differences in guidance properties between frequent and occasional guiders. Frequent guiders also display improvements over time in guidance accuracy, bias, and timeliness, that are consistent with a better understanding of the guidance process. Overall, our results are consistent with frequency being an important classificatory variable.

Key Words: Earnings Guidance, Management Forecasts, Guidance Frequency, Learning

1. Introduction

Prior research has examined several aspects of earnings guidance including factors that influence the propensity to issue guidance, properties of the guidance issued, analysts' and market responses to guidance, and reasons why firms stop issuing guidance.[1,2] Little is known, however, about the extent to which a firm's overall propensity to issue guidance is related to the properties of the guidance issued and the market's reaction to the guidance. In this paper, we argue that guidance frequency is an important classificatory variable. Frequent guiders are likely to represent a class or type of firms that commit to increased levels of disclosure through their guidance (Leuz and Verrecchia 2000; Brown, Hillegeist and Lo 2004) and therefore have different incentives and processes that affect the properties of the guidance, its market impact, and learning over time. Classifying based on guidance frequency also furthers our understanding of some of the results documented in prior studies.

While prior research is silent on the link between the *quantity* and *quality* of the respective disclosures, our empirical results suggest that there is a significantly positive association between the two constructs. We find that firms that guide more frequently provide guidance earlier in the period, with lower error, less optimistic bias, and more precision than occasional guiders.[3] Similar to firms that commit to increased levels of disclosure independent of the content of the news, we also find that frequent

[1] We define earnings guidance as all management earnings forecasts issued after the start of a fiscal quarter and before the earnings announcement.

[2] See Venkataraman, Koonce, and Hirst (2008) for a recent review of the literature on management earnings forecasts.

[3] We define precision as the range-width of guidance and specificity as an ordinal variable that gives the highest value to the most specific guidance form. Point, range, open-ended, and qualitative guidance are coded as 4, 3, 2, and 1, respectively.

guiders issue guidance when news is more positive compared to occasional guiders.[4] Our results are robust to a regression analysis that includes firm fixed effects and variables associated with firm maturity. While several firm characteristics such as size, litigation risk, analyst following, profitability, and institutional ownership are significantly related to guidance frequency, the signs of many of the effects run counter to the argument that the stability that comes with firm maturity accounts for the differences noted above.

Also similar to firms that commit to increased levels of disclosure so as to reduce their cost of capital (Leuz and Verrecchia 2000; Brown et al. 2004), we find that markets react differently to guidance issued by frequent guiders. Controlling for the amount of news issued, we show that the market reaction to guidance issued by frequent guiders is more positive for good news and less negative for bad news. This is consistent with market awareness of our findings that occasional guiders tend to issue more optimistic and less accurate guidance as compared with frequent guiders.

The discussion so far has focused on what can be gleaned by comparing frequent guiders to occasional guiders. Research in economics (Arrow 1962), psychology (Einhorn and Hogarth 1978), and management (Huber 1991; Zollo and Winter 2002) finds that individuals and organizations learn through experience when frequency and immediacy of feedback are high. Earnings guidance provides a setting where immediacy of feedback is high (based on market response to actual earnings). In addition, the "Learning-by-Doing" (LBD) model assumes that the marginal cost of performing a task decreases as the cumulative experience with the task increases. The learning that occurs can take on several forms including learning to self-select out of

[4] We also find that 48% of the guidance issued by frequent guiders was in periods of bad news as compared with 60% for the occasional guiders. This suggests that frequent guiders are willing to guide independent of the nature of news, which is consistent with a commitment to disclose. Occasional guiders, on the other hand, guide in periods of bad news.

guidance disclosure (Chen, Matsumoto, and Rajgopal 2007; Feng and Koch 2008; Houston, Lev, and Tucker 2009), learning the parameters of the underlying process that generates the estimates, gaining a better understanding of the flexibility in their accounting system to meet announced guidance numbers, and gaining a better understanding of the market's expectation in terms of the properties and timing of guidance.[5]

While all these forms of learning suggest that the properties of guidance should improve over time for frequent guiders, we carry out analyses to examine if firms display learning beyond that implied by the first form of learning, self-selection. We carry out two kinds of analyses. We first use the traditional Heckman two-stage selection model to control for the form of learning that causes firms to stop reporting. The results reported in section five suggest that at least part of the results we find on frequent guiders is attributable to the type of learning that occurs as a result of a better understanding of the guidance process. While we control for factors associated with firm maturity in the analysis, to the extent that the controls are imperfect, it is possible that firm maturation is a contributor to our results.

We also conduct a matched sample analysis by comparing guidance issued by frequent guiders to guidance issued by occasional guiders over time. Using a matched sample approach also controls for learning that can occur in the absence of public disclosure of guidance (the occasional guiders act as the benchmark for internal

[5] While firms that refrain from issuing public guidance still have internal targets and opportunities to improve the quality of their guidance over time, we argue it is not the same as issuing guidance. First, they do not receive feedback from market participants' responses about the costs and benefits of guidance, which is our main motivation for examining analysts' and market reactions to guidance. Second, if public issuance of guidance affects the benefits from higher quality guidance, it should cause more resources to be invested in the guidance generation and disclosure process. Third, learning about the flexibility of the accounting system to meet guidance estimates could be more muted in the absence of a publicly issued guidance. To control for learning that occurs even in the absence of public disclosure of guidance, we examine properties of guidance of frequent guiders adjusted for properties of guidance issued by occasional guiders.

learning). Consistent with the effect of learning, we continue to find that guidance issued by frequent firms becomes more accurate, less optimistically biased, and more timely. Interestingly, the results of this analysis suggest that, contrary to the self-selection hypothesis, the frequent guiders are less accurate compared to the occasional guiders in their early guidance attempts. This finding suggests that the frequent guiders are not simply those that were successful in their early guidance and points more to a commitment or policy to guide.

In addition to the effect on guidance properties, market response and learning, we find that classifying firms based on guidance frequency helps to shed more light on some of the empirical evidence documented in prior studies. For example, early work in guidance found that firms are more likely to issue good news guidance (e.g. Patell 1976; Penman 1980; Lev and Penman 1990) while more recent work has documented a greater likelihood of guidance in the face of bad news (e.g., Francis, Philbrick, and Schipper 1994; Skinner 1994; Kasznik and Lev 1995; Skinner 1997). Our results show that frequent guiders are more likely to guide independent of the news while occasional guiders are more likely to guide in periods of bad news. Frequent guiders are also less likely to report losses, more likely to meet or beat analysts' consensus forecasts, and have higher ROAs, thereby indicating the bad news hypothesis is more applicable to occasional guiders. Similarly, while some studies provide evidence that guidance issuance reduces bid-ask spreads and analyst dispersion (Coller and Yohn 1997; Clement, Frankel, and Miller 2003), others suggest that management guidance on average, increases investor uncertainty (Baginski, Conrad, and Hassell 1993; Rogers, Skinner and Van Buskirk 2009). Our results suggest that analyst dispersion is lower, on average, for firms that guide frequently and that investors and analysts respond more to their guidance issuances.

The rest of the paper is organized as follows. Section two discusses the background literature and develops the empirical predictions. Section three describes the data and sample selection. Section four defines the variables and provides descriptive statistics while section five provides the results of the association tests between guidance frequency and guidance properties. Section six examines whether firms exhibit learning in the properties of the guidance issued. Section seven discusses the additional analyses while section eight summarizes the paper.

2. Prior Research and Empirical Predictions

2.1. Guidance Frequency, Guidance Properties and Market Response

Following Leuz and Verrecchia (2000) and Brown et al. (2004), we argue that firms commit to a higher level of disclosure to benefit from decreases in information asymmetry. Using frequency of conference calls as an indicator of an ex ante policy of enhanced disclosure, Brown et al. (2004) find that greater call frequency results in lower information asymmetry. In the same spirit as Brown et al. (2004), we argue that guidance frequency can be rationally used by investors as reflecting an ex-ante policy of enhanced disclosure and therefore frequent guiders are similar to firms that commit to other types of increased disclosure.[6] In our framework, firms have two decisions to make regarding guidance. First, they choose the class or type of firm to which they belong (frequent or occasional guiders) and then they choose whether to issue guidance as well as the properties of the guidance in any given period.[7] Both choices

[6] Surveys of managers support this argument (Graham, Harvey, and Rajgopal 2005).

[7] Guidance commitment or policy is also likely to be affected by management changes. This could result in a situation where a firm that guided only a few times might in fact have had a policy to guide, but stopped guiding after management turnover. However, we do not believe this has a major effect on the interpretation of our results. First, even with an ex-ante policy to guide, if a firm has done so only a few times, it is unlikely to have accumulated enough experience to fully enjoy the benefits of its initial policy choice. To the degree these firms have such experience, treating the policy guiders who briefly had a policy in place and therefore guided only a few times as occasional guiders decreases our chances of finding significant results. Second, by classifying firms based on observed frequency, we are

are driven by a trade-off between the relative costs and benefits. However, aspiring to being a frequent guider in the first stage significantly changes the cost-benefit trade-off in the second stage by making the guidance issuance process a repeat game for the frequent guiders. Thus, we expect occasional guiders to issue guidance based only on consideration of current circumstances, while frequent guiders have to be aware that this is just one in a series of potential issuances.

Guidance properties of frequent guiders are therefore likely to be different from those of occasional guiders. For example, when issuing guidance frequent guiders are likely to be less affected by the nature of news being disclosed. Skinner (1994) and Kasznik and Lev (1995) argue that one reason a firm issues guidance is the preemptive dissemination of bad news, thereby fending off potential litigation. Under this scenario firms are more likely to communicate bad news through guidance issuances. But for firms that are regular guiders, not issuing or stopping guidance can prove costly (Chen et al. 2007; Houston et al. 2009) and they are less likely to be constrained to bad news settings. Thus we predict that the bad news hypothesis is more applicable to occasional guiders.

Prior work examining analysts' forecasts has found that firms enjoy a premium to beating earnings (Bartov, Givoly and Hayn 2002; Kasznik and McNichols 2002; Bhojraj, Hribar, McInnis, and Picconi 2009). Research has also found that analysts' forecasts follow an optimistic-pessimistic pattern over time (Richardson, Teoh, and Wysocki 2004; Ke and Yu 2006; and Libby, Hunton, Tan, and Seybert 2008), and that bias in short-term management guidance contributes to this pattern (Baik and Jiang 2006; Cotter, Tuna, and Wysocki 2006). These streams of work suggest that a

---

ensuring that these firms have maintained the policy to guide for an extended period independent of managerial turnover. Finally, to further lessen the possibility of management changes determining our results, we carry out rolling period analyses and analyses using a shorter period of 8 years and find similar results.

pessimistic bias in short-term management guidance is desirable and advantageous. We predict that frequent guiders are more aware of the benefits of being pessimistic and their guidance will reflect this awareness. Finally, frequent guiders are also more likely to commit greater resources to the process of guidance generation to achieve the benefits of reduced information asymmetry and are likely to learn from past guidance history. This should be reflected in greater accuracy, tighter ranges, and an ability to generate guidance earlier in the period.

Prior research provides limited evidence on the association between firms' guidance records and market responses. Williams (1996) finds that analysts are more responsive to a current period management forecast if the management forecast in the prior period is more useful, but only for good news. In contrast, Hutton and Stocken (2009) find that investor reactions to both good news and bad news guidance are increasing in the length and accuracy of firm's prior guidance history. Their evidence suggests that firms increase their perceived credibility by establishing a record for issuing accurate guidance.

As discussed earlier, while we expect frequent guiders to be more accurate, we also expect them to be less optimistic than occasional guiders. This suggests that the market response to guidance issued by frequent guiders as compared to those issued by occasional guiders, per unit of news, will vary depending on the sign of the news (i.e., good news or bad news). The greater accuracy of the frequent guiders should result in a larger market response per unit of news for both good and bad news. However, if the market adjusts for the greater optimistic bias on the part of the occasional guiders, this would result in a larger market response per unit of good news, but a smaller reaction per unit of bad news for the frequent guiders compared with the occasional guiders. As a consequence, we expect a greater market response

per unit of good news for frequent guiders, but may see a greater or smaller reaction per unit of bad news for frequent guiders, compared with the occasional guiders.

2.2. Guidance Frequency and Learning

Research in economics (Arrow 1962), psychology (Einhorn and Hogarth 1978), and management (Huber 1991; Zollo and Winter 2002) finds that individuals and organizations learn through experience when frequency and immediacy of feedback are high. In addition, the learning-by-doing (LBD) model argues that the effort involved in executing a task is decreasing in the cumulative experience. Mikhail, Walther, and Willis (1997) incorporate assumptions of the Learning-by-Doing model to show that analysts' forecast accuracy improves with experience.

Earnings guidance provides an interesting setting to examine organizational learning because it is a repetitive setting where feedback from the market is quick. Firms that are likely to issue regular guidance have an incentive to expend effort and invest resources in the guidance issuance process until the marginal benefit from guidance improvement is equal to the marginal cost in each period. These firms are also more likely to incorporate and benefit from feedback they receive from markets on the guidance issued. The learning that occurs can take on several forms. First, firms could learn that they are low quality guiders and choose to change their guidance policy. This is a form of self-selection that we try to control for in our analysis. Second, firms could learn about the underlying process that generates the estimates. This should result in improved extrapolation models within the firm to better predict earnings. Third, firms could gain a better understanding of the flexibility in their accounting system to meet announced guidance numbers. Lastly, firms could gain a better understanding of the market's expectation in terms of the properties and timing of guidance and make adjustments accordingly. While the second and third form of

learning affect the firm's ability to generate guidance with certain properties, the last form of learning affects the firm's ability to issue guidance with properties favored by the market. The feedback received by firms from markets after providing guidance should also improve their understanding of the costs and benefits of providing guidance. In terms of the properties of guidance favored by the market, and the resultant direction in the evolution of guidance issued, prior work provides an indication of market's preference. Prior work indicates that markets respond more to accurate guidance as well as guidance with a tighter range (Hutton and Stocken 2009; Libby, Tan, and Hunton 2006). As discussed earlier, research shows that analysts' forecasts follow an optimistic-pessimistic pattern over time (Richardson et al. 2004; Ke and Yu 2006; and Libby et al. 2008), and that bias in short-term management guidance contributes to this pattern (Baik and Jiang, 2006 and Cotter et al. 2006). These streams of work suggest that a less optimistic bias in short-term management guidance is desirable and advantageous.[8] A timely disclosure allows the managers' private information to be more quickly incorporated into prices and consequently reduces information asymmetries (King, Pownall, and Waymire 1990). Therefore, we suggest that timelier guidance (without sacrificing guidance accuracy) would be preferred. We argue that guidance frequency and the resulting experience enhances firms' ability to understand and respond to the market's preference and therefore predict that firms with experience will become more accurate, have tighter range, be less optimistically biased and issue guidance earlier.

[8] In addition to the market's preference, managers have incentives to issue positive disclosures that increase their stock price (Verrecchia 1983). However, they also face an asymmetric loss function for issuing overly optimistic forecasts (Skinner 1994). Therefore, we argue that firms will learn to weight the benefits of issuing more good news with the costs of issuing an unattainable forecast resulting in less optimistically biased guidance as guidance experience increases.

3. Sample Selection

We begin with a sample of quarterly earnings forecasts in the First Call Company Issued Guidelines (CIG) file. The CIG file includes both quarterly and annual forecasts but we limit our sample to quarterly EPS guidance because feedback is more immediate in this setting. We identify each estimate as point, range, open-ended, or qualitative following the guidelines in Anilowski, Feng, and Skinner (2007). We include only forecasts issued during the period from 1995 to 2005 and further restrict our observations to the first guidance issued if a firm guides more than once for a given quarter.[9] After deleting all guidance revisions, we merge the CIG file with Compustat and only retain firms with available data on Compustat and firms that are in existence the entire period from the end of fiscal years 1995 to 2005. This requirement eliminates the possibility that our findings are attributable to a survival bias where poor performers are subsequently dropped out of our sample in later periods and therefore appear as occasional guiders.[10] We then measure firms' guidance frequency by calculating the number of quarters (*Frequency*) in which a firm has issued quarterly guidance during our sample period. This results in a sample of 1,821 firms.

[9] We do not consider revisions in our sample as we are interested in the number of "quarters" rather than the number of "times" a firm guides during 1995-2005. Our results are also similar when we use the last guidance issued each quarter.

[10] We examine the robustness of our results to alternative sample selection specifications. The results using these alternative specifications are similar to those described in the main results. These alternative specifications are discussed in more detail in the additional analyses section.

Table 1.1. Distribution of Management Guidance 1995-2005

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total	Row%
1	269	257	217	305	202	194	163	69	55	54	36	1821	12.25
2	52	137	164	266	204	204	219	91	67	58	42	1504	10.12
3	6	52	101	179	209	221	228	130	75	64	30	1295	8.71
4		22	38	116	165	210	264	130	97	77	39	1158	7.79
5		4	25	64	120	154	266	175	89	84	46	1027	6.91
6		1	12	35	72	128	220	205	99	92	49	913	6.14
7			5	23	42	99	178	209	126	88	42	812	5.46
8			2	13	22	64	154	196	138	96	59	744	5.01
9			1	8	13	48	113	180	137	108	68	676	4.55
10				4	10	28	78	160	140	111	78	609	4.10
11				2	8	15	63	122	145	115	85	555	3.73
12				1	2	14	45	97	143	109	84	495	3.33
13					1	10	30	78	142	113	78	452	3.04
14					1	7	19	53	118	138	80	416	2.80
15					1	3	13	42	94	135	82	370	2.49
16						2	8	35	72	128	83	328	2.21
17						1	6	26	52	121	94	300	2.02
18						1	2	15	38	103	111	270	1.82
19							2	9	33	79	111	234	1.57
20							2	5	25	63	107	202	1.36
21							1	4	19	46	98	168	1.13
22							1	1	12	31	89	134	0.90
23								2	4	32	66	104	0.70
24								2	4	19	50	75	0.50
25								1	4	14	38	57	0.38
26									2	10	28	40	0.27
27									2	4	25	31	0.21
28									2	4	16	22	0.15
29									1	4	11	16	0.11
30										2	8	10	0.07
31										2	4	6	0.04
32										2	3	5	0.03
33										1	3	4	0.03
34											2	2	0.01
35											2	2	0.01
36											2	2	0.01
37											1	1	0.01
Total	327	473	565	1016	1072	1403	2075	2037	1935	2107	1850	14860	
Column%	2.20	3.18	3.80	6.84	7.21	9.44	13.96	13.71	13.02	14.18	12.45	0.01	

The row (column) indicates the sequence (year) of guidance issuance. The minimum (maximum) number of guidance issued for our sample firms during 1995-2005 is 1 (37).

The resulting sample is merged with returns data from CRSP, analyst information from IBES, institutional ownership data from Thomson, and executive compensation data from Execucomp. Of the 1,821 firms in our sample, 1,584 firms have analyst and institutional ownership data while 855 have Execucomp data. Given that Execucomp significantly constrains our sample, we use the subsample of firms that are on IBES and Thomson for most of our analyses to maximize the power of our tests.[11] However, in keeping with findings of Nagar, Nanda and Wysocki (2003) we examine a specification that includes executive compensation in the analysis of guidance frequency. We also control for firm fixed effects when possible to address concerns about correlated omitted variables.

Table 1.1 provides the number of management forecasts in our sample by sequence and year. The minimum (maximum) guidance frequency is 1 (37). 269 firms issued their first forecast in 1995 compared with 36 firms in 2005. The last row provides the total number of forecasts issued per year. Consistent with Anilowski et al. (2007), the number of forecasts increases steadily from 1995 to 1997 but experiences a jump in 1998.[12] The number of forecasts issued again increases significantly in 2001 which may be due to the effect of Regulation FD.

[11] Since we lose a small number of firms due to lack of analyst data, we also examine our results using the entire sample of firms without requiring analyst information. The results are very similar to those using the primary sample.

[12] Anilowski et al. (2007) find an increase in the number of forecasts in the database starting in 1998. We choose to use the longer sample period because that increases the power of our primary variable of interest (identifying frequent guiders), especially in the learning analysis in section 5. We believe that ignoring information relating to known guidance quarters prior to 1998 and assuming that a firm commences learning in 1998 is an inferior sample selection choice. However, to examine the robustness of our results, we also carry out an analysis using a sample that commences in 1998. The results are very similar to those discussed in the main section of the paper. We discuss this in more detail in the additional analyses section.

4. Variable Definitions and Descriptive Statistics

4.1. Measures of Guidance Properties

We examine the association between guidance frequency and several guidance properties including error, bias, specificity, range and horizon. *Error* is the absolute difference between guidance and actual earnings, scaled by beginning-of-quarter price.[13] *Bias* is guidance minus actual earnings, scaled by beginning-of-quarter price. Therefore, a positive value of *Bias* suggests that managers were optimistic in their forecasts. The *Error* and *Bias* variables are calculated using actual earnings reported in the First Call Actuals file to ensure consistency between management guidance and EPS realizations. *Specificity* is an ordinal variable for guidance specificity where point, range, open-ended, and qualitative guidance are coded as 4, 3, 2, and 1, respectively. *Range* is the width of range guidance issuances, scaled by beginning-of-quarter price.[14] *Horizon* is the number of days between guidance issuance and the fiscal period end. This can take on positive or negative values depending on whether the guidance was issued prior to or subsequent to the fiscal year end.

4.2. Measures of Market Response

To examine market response to guidance we examine two measures. *MktReaction* is the three-day cumulative adjusted returns centered on guidance issuance date. *ChgConsensus* is the difference in analysts' mean consensus forecasts before and after guidance issuance, scaled by beginning price.

[13] The value of the guidance is either the point or open-ended estimate given by the manager or the mid-point of the range estimate. We use the mid-point for range estimates because prior research suggests that investors use the mid-point when forming their expectations of earnings (Baginski et al. 1993).

[14] We use the logged transformation of *Error* and *Range* when they are the dependent variable in any of our multivariate analyses since the values of *Error* and *Range* are always non-negative. Untabulated tests indicate that results using the untransformed values are similar.

4.3. Explanatory and Control Variables

We measure firms' guidance frequency by calculating the number of quarters (*Frequency*) in which a firm has issued quarterly guidance during our sample period. In our analysis, we use the frequency of guidance issued as the quintile classification variable. Our main independent variable, *MGQuintile*, is the quintile rank of *Frequency* over our sample period. We use several control variables drawn from prior research in our analysis. We include the market value of firm equity (*Size*) because prior studies find a positive association between firm size and guidance occurrence (Kasznik and Lev 1995; Ajinkya, Bhojraj, and Sengupta 2005). We proxy for performance using return on assets (*ROA*) as Miller (2002) finds that disclosure frequency declines with weaker earnings performance. *TotalNews* is the difference between actual earnings and analysts' expectation prior to the guidance. We use this measure because it captures both the news at the earnings guidance issuance and the earnings announcement date (Soffer, Thiagarajan, and Walther 2000). Because managers of loss firms have greater difficulty estimating earnings (Ajinkya et al. 2005), we also control for whether a firm reported a loss in a specific quarter (*Loss*). Litigation risk (*LitRisk*) is an indicator variable equal to one if a firm is in the biotech, retailing, electronics, or computer industry. Prior research provides mixed evidence on the association between litigation risk and guidance. Ajinkya et al. (2005) find that firms in high litigation risk industries issue guidance less frequently while Skinner (1994) and Wang (2007) find that these firms are more proactive in issuing voluntary disclosures. Following Bamber and Cheon (1998), we include market to book (*M/B*) as a proxy for proprietary costs because of its negative association with guidance. However, it can also be considered as a proxy for information asymmetry (Verrecchia 1990), which would then predict a positive association between *M/B* and *Frequency*. Waymire (1985) finds that firms with volatile earnings issue forecasts less frequently.

Earnings volatility (*EarnVol*) is defined as the volatility of seasonally adjusted earnings for the twelve quarters before the current fiscal quarter, divided by median assets over the twelve quarters. We also include a firm's equity beta (*Beta*) as a proxy for market risk (Bushee and Noe 2000). Ajinkya et al. (2005) examine the effect of institutional ownership on management guidance and find that firms with larger institutional ownership issue guidance more frequently. Therefore, we also control for institutional ownership (*Inst*). Similarly, we include the number of analysts following (*Num*) and dispersion in analysts' consensus forecasts (*Disp*) because we expect firms committed to increased disclosure to have higher analyst following and lower analyst dispersion (Ajinkya and Gift 1984; Lang and Lundholm 1996). Feng and Koch (2008) find that firms that disappoint analyst expectations in the past are more likely to stop issuing future guidance. Therefore, we also include an indicator variable equal to one if the firm meets or beats analysts' consensus forecasts in that quarter (*MBAnalyst*). The number of business segments (*Segments*) as a proxy for firm complexity is relevant because firms with multiple product lines and subsidiaries are more likely to benefit from increased disclosures that help investors analyze the firm. We also control for a firm's financial reporting conservatism and performance variability because Hui, Matsunaga, and Morse (2009) find that firms with more conservative financial statements and variability in their performance issue guidance less frequently in subsequent periods. Our measure of conservatism (*Cons*) is total accruals scaled by total assets averaged over 1990 to 1994 (Givoly and Hayn 2000). Following Hui et al. (2009), we also use the standard deviation of annual stock returns (*RetVol*) prior to the guidance period (1990-1994) as a proxy for performance uncertainty. However, firms with high variability in their performance are also likely to disclose more frequently to assist investors' valuations. Lastly, Nagar, Nanda, and Wysocki (2003) find that stock price-based incentives elicit managers to disclose more frequently. Therefore, we also

examine the average ratio of the CEO's equity compensation to total compensation (*Ecomp*) and the logged value of the CEO's shareholdings (*Wealth*).

4.4. Descriptive Statistics

Panel A of Table 1.2 provides univariate descriptive statistics on the firm characteristics for the firms in the various quintiles. Firms in *MGQuintile1* issued guidance only once during our sample period while the average guidance frequency is 20.44 for firms in *MGQuintile5*. We find that several firm characteristics are significantly related to guidance frequency. Firms that issued guidance more frequently are significantly larger. The median firm in *MGQuintile5* is approximately 10 times larger than the median firm in *MGQuintile1*. The frequent guiders are also less likely to report losses, and are more likely to be from high litigation risk industries. Frequent guiders also have higher ROAs, lower earnings volatility, lower return volatility, higher institutional ownership, more analysts following, and lower analyst dispersion. While occasional guiders are likely to guide in periods of bad news, frequent guiders are not limited by the news in providing guidance. The average *TotalNews* for *MGQuintile5* is not significantly different from zero. However, the average percentage of quarters where *TotalNews* is greater or equal to zero is significantly higher for firms in *MGQuintile5*. Guidance frequency also increases in both the proportion of CEO compensation tied to the stock price and the value of the CEO's stockholdings. While we would expect frequent guiders to be more mature and stable firms, their price to earnings ratios suggest otherwise. The difference in means of firms in *MGQuintile1* and *MGQuintile5* are significant at the five percent level using a t-test for all but three of the variables.

We examine the association between guidance frequency and firm characteristics using a multivariate Poisson regression. We use the Poisson regression

method rather than the OLS because the dependent variable is count data. The model is as follows (firm subscripts and the intercept term have been suppressed):

$$\begin{aligned} Frequency = {} & \beta_1 Size + \beta_2 Loss + \beta_3 ROA + \beta_4 LitRisk + \beta_5 M/B + \beta_6 EarnVol + \beta_7 Beta + \beta_8 Inst \\ & + \beta_9 TotalNews + \beta_{10} Num + \beta_{11} MBAnalyst + \beta_{12} Disp + \beta_{13} Cons + \beta_{14} RetVol \\ & + \beta_{15} Segments + \beta_{16} Ecomp + \beta_{17} Wealth + \varepsilon \end{aligned} \quad (1)$$

Frequency is the number of initial management forecasts issued between 1995 and 2005. The explanatory variables are as described earlier. Given that *Frequency* is a firm level variable, the explanatory variables used in the regression are firm averages from 1995 to 2005.[15]

Panel B of Table 1.2 provides results of this analysis. We first report the results corresponding to the full sample of 1,821 firms. Consistent with the univariate statistics, guidance frequency is positively associated with firm size, performance (as proxied by *ROA* and *Loss*), litigation risk, information asymmetry (as proxied by *M/B*), and market risk (as proxied by *Beta*). We also find that guidance frequency is negatively associated with the likelihood of having losses. We next include controls for analyst following and institutional ownership and find that guidance frequency continues to be significantly associated with *Loss*, *LitRisk*, and *Beta*. The coefficients on the analyst and institutional ownership-related variables also suggest that firms committed to issuing guidance have a higher number of analysts following (*Num*), larger institutional ownership (*Inst*), lower analyst dispersion (*Disp*), and are more likely to meet or beat analysts' consensus (*MBAnalyst*). The positive coefficient on *TotalNews* confirms the univariate results that guidance frequency is positively associated with news. The univariate and multivariate results on *TotalNews*, *ROA* and *Loss* help reconcile mixed results in prior research on whether firms guide in periods of bad or good performance. The results suggest that firms that display a commitment

[15] *RetVol* and *Cons* are firm averages from 1990 to 1994.

to guide are less constrained by the nature of news in providing guidance and are therefore likely to guide in periods of good and bad news. Earlier findings indicating increased guidance during periods of bad news are therefore more applicable to occasional guiders. We also control for conservatism and return volatility in this specification and find that firms with more conservative financial statements issue guidance less frequently consistent with Hui et al. (2009). Following Nagar et al. (2003), the last column presents results controlling for the number of business segments (*Segments*) and management stock-based incentives (*Ecomp* and *Wealth*). The positive and significant coefficients on *Segments* and *Wealth* suggest that more complex firms and firms whose CEOs have more wealth tied to the firm's stocks also issue guidance more frequently. Note that our sample size is reduced by half when we include controls for management stock-based incentives because a majority of firms in the bottom guidance frequency quintiles do not have complete CEO compensation data on ExecuComp. Therefore, we only include controls for analyst following and institutional ownership to maximize the number of sample firms in our subsequent tests.

Consistent with prior research, the findings from this analysis suggest that firms which commit to increased disclosure are different from firms that issue guidance occasionally across several dimensions. Moreover, the findings from this analysis provide evidence against a pure maturation based explanation for our results. Although frequent guiders are larger firms, they are also more likely to be in litigation prone industries (which tend to have high growth). This higher growth setting is consistent with the higher market to book ratios and the higher price to earnings multiples that the frequent guiders enjoy.

Table 1.2. Guidance Frequency and Firm Characteristics

Panel A Descriptive Statistics

	MGQuintile1			MGQuintile2			MGQuintile3			MGQuintile4			MGQuintile5		
	M	Median	N	M	Median	N	M	Median	N	M	Median	N	M	Median	N
Frequency	1.00	1.00	317	2.40	2.00	346	5.26	5.00	414	10.63	10.00	374	20.44***	20.00	370
Size	1892	183	317	3819	336	346	3720	630	414	4171	750	374	8876***	1819	370
Loss	0.28	0.20	317	0.22	0.15	346	0.20	0.14	414	0.19	0.14	374	0.11***	0.07	370
TotalNews	-0.04	-0.01	168	-0.06	-0.03	242	-0.04	-0.02	314	-0.03	-0.02	315	-0.01	-0.01	335
PosTotalNews %	0.40	0.00	168	0.31	0.00	242	0.37	0.33	314	0.45	0.50	315	0.52***	0.50	335
ROA	0.00	0.01	317	0.01	0.01	346	0.01	0.01	414	0.01	0.01	374	0.02***	0.02	370
LitRisk	0.04	0.00	317	0.04	0.00	346	0.04	0.00	414	0.08	0.00	374	0.17***	0.00	370
M/B	2.98	1.97	317	4.11	1.98	346	2.71	2.26	414	3.16	2.32	374	5.06	2.90	370
P/E	8.55	12.63	317	14.11	13.99	346	17.55	16.46	414	17.03	16.55	374	20.90***	20.04	370
EarnVol	0.07	0.02	317	0.04	0.01	346	0.04	0.01	414	0.03	0.01	374	0.02*	0.01	371
Beta	0.86	0.68	317	0.91	0.77	346	1.06	0.88	414	1.10	0.94	374	1.04***	0.92	370
Inst	0.36	0.33	294	0.44	0.44	326	0.53	0.55	389	0.60	0.63	360	0.65***	0.68	359
Num	3.51	2.08	272	4.67	3.09	308	6.05	4.02	379	6.76	5.33	356	9.80***	8.09	353
MBAnalyst	0.54	0.57	272	0.57	0.57	308	0.60	0.62	379	0.65	0.68	356	0.73***	0.74	353
Disp	0.03	0.02	225	0.03	0.02	284	0.03	0.02	369	0.03	0.02	354	0.01***	0.01	352
Segments	1.81	1.65	269	1.89	1.84	309	2.02	1.86	398	2.08	1.96	368	2.08***	1.93	368
Cons	0.02	0.02	256	0.01	0.01	292	0.01	0.01	368	0.00	0.01	347	0.01**	0.01	350
RetVol	0.44	0.35	235	0.43	0.37	252	0.40	0.33	303	0.40	0.34	265	0.37***	0.33	286
Ecomp	0.42	0.43	123	0.44	0.46	163	0.50	0.52	267	0.50	0.52	288	0.53***	0.55	335
Wealth	31.31	8.55	124	67.47	7.67	162	52.76	9.52	266	58.76	9.70	285	226.38**	11.30	335

M = mean. The sample consists of 1,821 firms between 1995 and 2005. Frequency is the number of quarterly earnings guidance issuance by a firm (excluding revisions) during sample period. MGQuintile is the quintile rank of guidance frequency. Descriptive statistics are reported at the firm level using firm averages over the 11-year sample period. See Appendix for variable definitions. Variables marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed t-test of difference in means of MGQuintile 1 and MGQUintile5.

Table 1.2 (Continued)

Panel B Poisson Regression			
	Dependent Variable: Frequency		
Size	2.967***	0.856	-0.501
	(0.611)	(1.124)	(1.188)
Loss	-1.132***	-0.588***	-0.629**
	(0.155)	(0.214)	(0.247)
ROA	6.436***	1.949	-2.825
	(1.452)	(1.799)	(2.053)
LitRisk	0.521***	0.273***	0.373***
	(0.057)	(0.063)	(0.070)
M/B	0.002***	-0.001	-0.002
	(0.000)	(0.003)	(0.004)
EarnVol	-0.720	-0.043	1.567
	(0.656)	(1.229)	(1.473)
Beta	0.308***	0.091**	0.088*
	(0.030)	(0.044)	(0.048)
Inst		0.976***	0.606***
		(0.135)	(0.175)
TotalNews		5.456**	5.892
		(2.076)	(4.601)
Num		0.019***	0.015***
		(0.005)	(0.005)
MBAnalyst		0.604***	0.667***
		(0.173)	(0.199)

This table presents poisson regression tests of the association between firm characteristics and guidance frequency. The dependent variable is the frequency of guidance issuances over the 11-year period 1995-2005. See Appendix for variable definitions. *Wealth* and *Size* are divided by 10^6 for expositional purposes. Standard errors reported in parentheses are clustered at the 2-digit SIC level. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test.

Table 1.2 (Continued)

Panel B Poisson Regression			
		Dependent Variable: Frequency	
Disp		-3.893***	-4.111***
		(1.258)	(1.456)
Cons		-0.284**	-0.637
		(0.140)	(0.441)
RetVol		0.031	0.066
		(0.102)	(0.122)
Segments			0.072***
			(0.026)
Ecomp			0.113
			(0.158)
Wealth			0.026**
			(0.012)
Pseudo R-squared	0.110	0.180	0.126
Firms	1821	1584	855

Table 1.3. Descriptive Statistics of Guidance Properties

	MGQuintile1			MGQuintile2			MGQuintile3			MGQuintile4			MGQuintile5		
	M	Median	N	M	Median	N	M	Median	N	M	Median	N	M	Median	N
Error	0.012	0.004	234	0.010	0.005	316	0.008	0.005	408	0.007	0.005	373	0.005****	0.003	370
Bias	0.012	0.001	234	0.007	0.002	316	0.006	0.002	408	0.003	0.002	373	0.002***	0.002	370
Specificity	2.748	3.000	317	2.763	3.000	346	2.836	3.000	414	2.930	3.000	374	3.043***	3.048	370
Range	0.003	0.002	83	0.003	0.002	220	0.003	0.002	330	0.002	0.002	354	0.002***	0.001	366
Horizon	12.722	1.000	317	23.794	11.667	346	31.485	22.060	414	50.622	47.229	374	60.019***	56.633	370
News	-0.003	0.000	153	0.000	-0.001	249	0.000	-0.001	345	-0.001	0.000	348	0.002***	0.000	348
MktReaction	-0.031	-0.016	297	-0.035	-0.027	343	-0.036	-0.026	413	-0.021	-0.015	374	-0.008***	-0.006	370
ChgConsensus	-0.003	0.000	140	-0.005	-0.001	249	-0.004	-0.002	339	-0.002	-0.001	347	-0.001***	-0.001	347

M = mean. The sample consists of 1,821 firms between 1995 and 2005. Frequency is the number of quarterly earnings guidance issuance by a firm (excluding revisions) during sample period. MGQuintile is the quintile rank of guidance frequency. Descriptive statistics are reported at the firm level using firm averages over the 11-year sample period. See Appendix for variable definitions. Variables marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed t-test of difference in means of MGQuintile 1 and MGQUintile5.

5. Guidance Frequency, Guidance Properties, and Market Response

Section four provides strong evidence that frequent guiders are different from occasional guiders on many dimensions. In this section, we examine the relation between guidance frequency and the properties of the guidance issued and analysts' and market response to them. As with the frequency regression above, the analyses in this section are conducted at the firm level using averaged values (and median values) from quarterly observations over the sample period (for both the dependent and independent variables). This is to ensure that each firm appears only once in the analysis and that frequent guiders do not benefit from a larger number of observations that would result from a guidance level analysis. We also carry out analyses at the firm-quarter level which allows us to use a rolling period specification. This second specification, discussed in the additional analysis section, avoids a peek-ahead bias by using the past frequency on a rolling basis.

Table 1.3 provides univariate statistics on the properties of guidance issued by firms in the quintiles.[16] The frequent guiders (*MGQuintile5*) display less optimism in their guidance with an average optimistic bias of 0.2% of price, approximately one-sixth the level for firms in *MgQuintile1*. Frequent guiders are also more accurate than the occasional guiders even though they provide their first guidance earlier. *Error* for firms in *MGQuintile5* is 0.5% of price as compared to 1.2% of price for firms in *MgQuintile1*. The statistics for *Horizon*, defined as the number of days between guidance issuance and the end of the fiscal period show that frequent guiders on average provide their first guidance 60 days prior to the end of the fiscal period as compared 12 days prior to the end of the fiscal period for the occasional guiders. Frequent guiders appear more likely to understand the earnings generation and

[16] To ensure that our results are not driven by extreme outliers in the CIG dataset, we winsorize *Error*, *Bias*, and *Range* at the 1 and 99 percent levels.

disclosure process and therefore are willing to issue guidance earlier. In addition to issuing more specific guidance, the frequent guiders also issue much narrower range guidance. Average Range-width for the guidance issued by firms in *MGQuintile5* is 0.2% of price as compared with 0.3% of price for firms in *MGQuintile1*.

Table 1.3 also provides univariate statistics on the market response variables across quintiles. The market response to guidance issued by occasional guiders is significantly more negative. The average market response in the three day trading window around the guidance issuance date for firms in the first quintile is -3.1%. This is compared with a return of -0.8% for firms in the fifth quintile. This is consistent with the news conveyed by occasional guiders being much worse than news conveyed by frequent guiders. The difference in market response is also evident in the change in analysts' forecasts. *ChgConsensus* is measured by finding the two statistical periods on IBES that are closest around the guidance issuance date and taking the difference between the mean consensus forecasts measured in the two periods. We find that, there is a significantly larger negative revision in response to guidance by occasional guiders.

We examine the effect of guidance frequency on guidance properties and market participants' responses to guidance utilizing in a multivariate setting using two approaches. First, we analyze an OLS specification as follows (firm subscripts and intercept terms have been suppressed):

$$Error = \beta_1 MGQuintile + \beta_2 Log(Size) + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 LitRisk + \beta_7 Inst + \varepsilon \quad (2)$$

$$Bias = \beta_1 MGQuintile + \beta_2 Log(Size) + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 LitRisk + \beta_7 Inst + \varepsilon \quad (3)$$

$$Range = \beta_1 MGQuintile + \beta_2 Log(Size) + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 LitRisk + \beta_7 Inst + \varepsilon \quad (4)$$

$$Horizon = \beta_1 MGQuintile + \beta_2 Log(Size) + \beta_3 Num + \beta_4 Loss + \beta_5 LitRisk + \beta_6 Inst + \varepsilon \quad (5)$$

$$MktReaction = \beta_1 MGQuintile + \beta_2 Log(Size) + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 LitRisk + \beta_7 Inst + \varepsilon \quad (6)$$

$$ChgConsensus = \beta_1 MGQuintile + \beta_2 Log(Size) + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 LitRisk + \beta_7 Inst + \varepsilon \quad (7)$$

One potential issue with the above analysis is that any documented association between *MgQuintile* and the dependent variables could be driven by an association between the dependent variables and some of the underlying firm characteristics that have been documented in Table 1.2 to be associated with guidance frequency. If that is the case then *MgQuintile* would not have explanatory ability of its own once the underlying firm characteristics are controlled for. To mitigate this possibility our second analysis involves carrying out a two-stage analysis wherein the first stage involves a regression of guidance frequency on several firm characteristics (see equation 1). The error term from this regression represents the variation in frequency that is unexplained by the firm characteristics. We use this error term in the second stage regressions (equations 2 to 7), in place of *MGQuintile* to isolate the incremental effect of frequency on guidance properties.

In the single stage OLS as well as in the second stage of the two stage analysis we control for *Size*, *Num*, and *Inst* because we expect larger firms and firms with more analysts following and higher levels of institutional ownership to issue guidance of higher quality (Ajinkya et al. 2005). We also include *Loss* and *LitRisk* because firms experiencing losses or firms in high litigation risk industries are likely to have greater difficulty predicting earnings. Lastly, we also control for *Horizon* because managers will have better information about predicted earnings the closer it is to the fiscal period end.

Table 1.4. Guidance Frequency and Guidance Properties (Means)

	Error		Bias		Range	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
MGQuintile	-0.002***	-0.002***	-0.003***	-0.002***	-0.001*	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Log(Size)	-0.000	-0.000	-0.000	-0.000	-0.001***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Num	-0.252	-0.343	-0.279	-0.393	0.014	-0.009
	(0.187)	(0.209)	(0.295)	(0.339)	(0.020)	(0.016)
Loss	0.014**	0.011*	0.010	0.006	0.004***	0.004***
	(0.006)	(0.006)	(0.009)	(0.009)	(0.001)	(0.001)
Horizon	0.011**	0.010**	0.007	0.008	0.001*	0.001
	(0.005)	(0.005)	(0.006)	(0.006)	(0.001)	(0.001)
LitRisk	0.000	-0.001	0.000	-0.002	-0.000	-0.000
	(0.001)	(0.001)	(0.002)	(0.002)	(0.000)	(0.000)
Inst	0.009	0.007	0.019	0.015	-0.000	-0.000
	(0.009)	(0.008)	(0.014)	(0.014)	(0.000)	(0.000)
R-squared	0.021	0.018	0.010	0.009	0.162	0.159
Firms	1575	1504	1575	1504	1270	1241

	Horizon		MktReaction		ChgConsensus	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
MGQuintile	0.029***	0.029***	0.004**	0.005***	0.001**	0.001**
	(0.003)	(0.003)	(0.002)	(0.002)	(0.000)	(0.000)
Log(Size)	0.005	0.004	0.002	0.003*	0.000	0.000
	(0.003)	(0.003)	(0.002)	(0.002)	(0.000)	(0.000)
Num	0.264	2.176**	0.113	0.032	0.073	0.095*
	(1.121)	(1.065)	(0.515)	(0.509)	(0.052)	(0.053)
Loss	0.023	0.031	-0.028**	-0.027*	-0.006***	-0.006***
	(0.021)	(0.023)	(0.013)	(0.014)	(0.002)	(0.002)
Horizon			0.047***	0.044***	0.004**	0.004***
			(0.014)	(0.014)	(0.001)	(0.001)
LitRisk	-0.000	0.015	0.009	0.012*	-0.000	-0.000
	(0.009)	(0.009)	(0.007)	(0.007)	(0.000)	(0.000)
Inst	0.017	0.077***	-0.007	0.005	0.000	0.001
	(0.018)	(0.019)	(0.010)	(0.009)	(0.001)	(0.001)
R-squared	0.121	0.113	0.030	0.041	0.080	0.078
Firms	1667	1584	1651	1569	1421	1398

This table presents OLS and 2SLS tests of the association between guidance frequency and guidance properties. The IV specification uses the error term from regressing *MGQuintile* on *Loss, LitRisk, Beta, Inst, Num, MBAnalyst,* and *Disp* in the first-stage as an instrumental variable for *MGQuintile* in the second-stage regressions. The results in the table reflect the second-stage regressions. See Appendix for variable definitions. *Size*, *Num*, and *Horizon* are divided by 10^6, 10^3, and 365, respectively, for expositional purposes. Standard errors reported in parentheses are clustered at the 2-digit SIC level. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test.

Table 1.4 provides results of the single stage and two-stage regressions explaining guidance properties. The analysis is done using firm level average values.[17] The univariate associations documented earlier continue to hold in the multivariate setting. For both specifications, the coefficients on *MGQuintile* are consistent with a positive association between guidance frequency and guidance quality. *MGQuintile* is negatively associated with *Error* (β_1 = -0.002 and -0.002, p < 0.01), *Bias* (β_1 = -0.003 and -0.002, p < 0.01), and *Range* (β_1 = -0.001, p < 0.1), and positively associated with *Horizon* (β_1 = 0.029, p < 0.01). Tests of the association between guidance frequency and market responses also suggest that investors respond more strongly to guidance issued by frequent guiders (β_1 = 0.004 and 0.005, p < 0.05). Analysts also respond more to guidance from frequent guiders (β_1 = 0.001 and 0.001, p < 0.05).

The results for the control variables are generally consistent with prior studies. In particular, we find that firms reporting losses issue more inaccurate and less precise guidance. Consistent with managers having less information in the beginning of the period, guidance issued at longer horizons have more error and range-width.[18]

Overall, we present evidence that frequent guiders provide guidance of higher quality. While prior research is silent on the link between the *quantity* and *quality* of management guidance, these results suggest that there is a strong association between these two constructs.

[17] Analysis is also carried out using firm level median values with similar results. This is discussed briefly in the additional analysis section.

[18] We also carried out our analysis using a dichotomous variable *OPT*, where *OPT* is coded as equal to one if the management estimate is optimistically biased. The logit results are similar to the *Bias* findings.

6. Learning over Time within Firms

The analysis thus far examines differences between frequent and occasional guiders. As discussed earlier prior research suggests that there is reason to believe that earnings guidance is an interesting setting to examine organizational learning. To examine if firms exhibit the learning beyond that implied by self-selection, we utilize the traditional Heckman two-stage procedure as well as a matched sample procedure.

6.1. Heckman Two-Stage Estimation

The Heckman two-stage procedure is applied by estimating the following models (firm and time subscripts have been suppressed):

$$\Pr(Occur) = \beta_1 Size + \beta_2 Num + \beta_3 Loss + \beta_4 Inst + \beta_5 ROA + \beta_6 MB + \beta_7 EarnVol + \beta_8 LagOccur + FirmFixedEffects + \varepsilon \quad (8)$$

$$Error = \beta_1 Sequence + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Inst + \beta_6 LagError + \beta_7 Horizon + \beta_8 SOX + \beta_9 InvMills + FirmFixedEffects + \varepsilon \quad (2a)$$

$$Bias = \beta_1 Sequence + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Inst + \beta_6 LagBias + \beta_7 Horizon + \beta_8 SOX + \beta_9 InvMills + FirmFixedEffects + \varepsilon \quad (3a)$$

$$Range = \beta_1 Sequence + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Inst + \beta_6 LagRange + \beta_7 Horizon + \beta_8 SOX + \beta_9 InvMills + FirmFixedEffects + \varepsilon \quad (4a)$$

$$Horizon = \beta_1 Sequence + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Inst + \beta_6 LagHorizon + \beta_7 SOX + \beta_9 InvMills + FirmFixedEffects + \varepsilon \quad (5a)$$

Model (8) is a probit model that estimates the likelihood of guidance occurrence. The dependent variable *Occur* is equal to one if the firm issued guidance in that period. The independent variables are *Size*, *Num*, *Loss*, *Inst*, *ROA*, *MB*, *EarnVol*, *Cons*, *RetVol* and an indicator variable controlling for guidance occurrence in the prior quarter (*LagOccur*). The variables are as of the beginning of the quarter. Estimated parameters from model (8) are then used to calculate the inverse mills ratio (*InvMills*), which is included as an independent variable in the second stage OLS

regressions. Models (2a) to (5a) examine whether guidance error, bias, range, and horizon improve over time, conditional on likelihood of guidance issuance. *Sequence* is the sequential order of guidance issuances for each firm ranging from 1 to 37. If firms learn to improve their guidance quality with repetition, then we expect the error, optimistic bias, and range-width in guidance to decrease and the timeliness of guidance to increase as *Sequence* increases.[19] We also control for the lag term (*LagError*, *LagBias*, *LagRange*, and *LagHorizon*) in the second stage regressions because we expect prior guidance outcomes to be highly associated with current period guidance decisions. Firm fixed effects are also included to control for correlated omitted variables. We also control for changes in the information environment resulting from new regulation by including an indicator variable (*SOX*) post-SOX period which takes on a value 1 for periods after 2002. This variable controls for the requirement to disclose internal control weaknesses in Sections 302 and 404 of the Sarbanes-Oxley Act which may incentivize firms to produce more accurate interim financial statements after 2002. These financial statements which management uses as inputs when forming guidance will then affect the properties of the guidance issued (Feng, Li, and McVay 2009).

Table 1.5 presents results of the Heckman two-stage estimation. As expected, *Sequence* is negatively associated with *Error* (β_1 = -0.218, p < 0.01) and *Bias* (β_1 = -0.002, p < 0.01) and positively associated with *Horizon* (β_1 = 0.052, p < 0.01). However, the coefficient is positive though non-significant for *Range*. This suggests that firms become more accurate, timelier, and less optimistically biased in their guidance issuances over time. The results for the control variables are generally

[19] The average guidance bias is positive (optimistic) across all *MGQuintiles* in our sample which is likely due to our choice of using the first guidance issued per quarter. However, the fact that frequent guiders issue less optimistically biased guidance than occasional guiders is consistent with frequent guiders learning to avoid issuing extreme downward revisions to their forecasts.

consistent with our expectations except for *Inst*.[20] Overall, the results suggest that firms' guidance properties improve with experience, even after controlling for self-selection.

6.2. Matched Sample Analysis

We also use a matched pair design as an alternative test for the effects of learning. By using a sample of guidance issued by occasional guiders as a control group, we are better able to attribute the differences observed to the effects of learning by the frequent guiders. The properties of the occasional guiders at any point in time reflect the general overall information environment and therefore act as our base case. For each year in our sample period, we calculate *DiffError*, *DiffBias*, *DiffRange*, and *DiffHorizon* by subtracting the mean guidance error, bias, range, and horizon for occasional guiders (*MGQuintile5*=0) from the mean guidance error, bias, range, and horizon for frequent guiders (*MGQuintile5*=1), respectively. Under the null hypothesis of no learning, the differences between the two groups should not change over time. However, if frequent guiders learn with experience, then we would expect *DiffError*, *DiffBias*, and *DiffRange* to become more negative and *DiffHorizon* to become more positive over our sample period.[21]

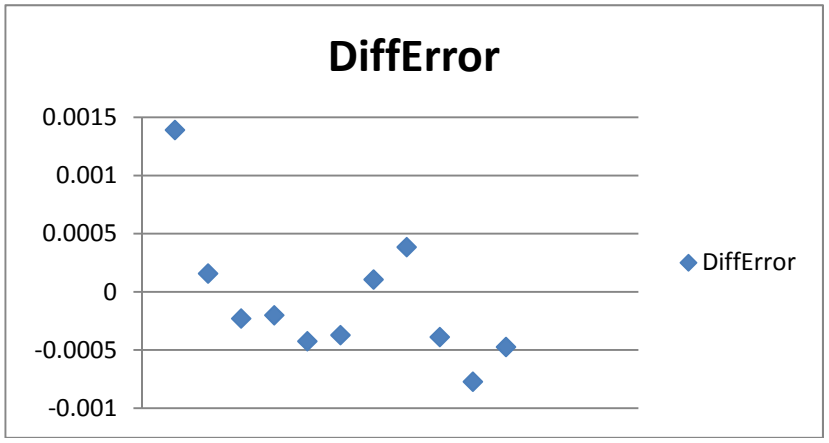
[20] We find in our untabulated tests that *Inst* is negative and significant when we use the untransformed values of *Error* and *Range*.

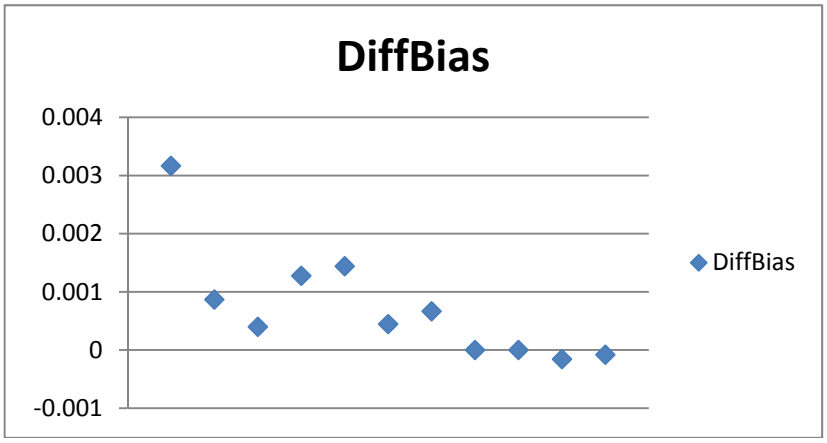
[21] This analysis is still subject to the possibility that general information environment changes could systematically affect frequent guiders more than occasional ones.

Table 1.5. Heckman Two-Stage Estimation of the Trends in Guidance Properties

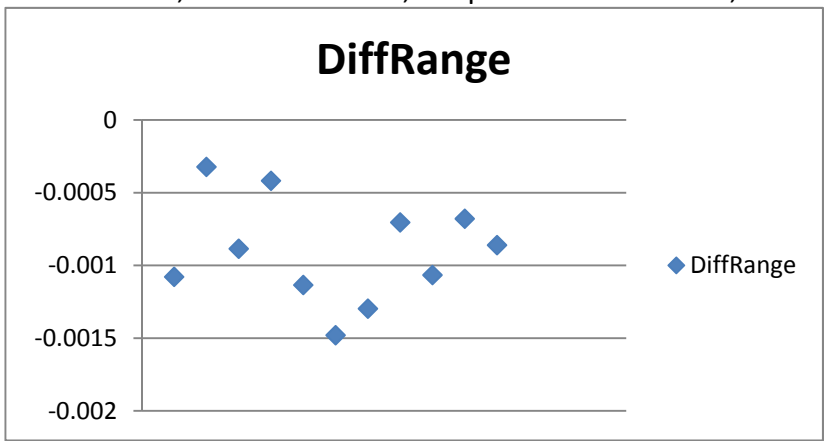
	Error	Bias	Range	Horizon
Sequence	-0.218***	-0.002***	0.039	0.052***
	(0.050)	(0.000)	(0.033)	(0.006)
Size	-15.921***	-0.036**	-18.866***	0.162
	(3.400)	(0.014)	(3.782)	(0.362)
Num	-46.028***	-0.014	-4.258	-0.409
	(6.124)	(0.057)	(4.755)	(0.805)
Loss	0.340***	0.005***	0.158***	-0.002
	(0.052)	(0.001)	(0.033)	(0.006)
Inst	1.807***	-0.008*	0.498***	-0.013
	(0.123)	(0.004)	(0.088)	(0.018)
LagDV	-0.731***	-0.030	-0.529***	-0.025
	(0.143)	(0.052)	(0.117)	(0.109)
Horizon	15.603***	0.016***	58.716***	
	(2.261)	(0.002)	(13.909)	
SOX	0.050	0.000	-0.029	-0.029***
	(0.047)	(0.001)	(0.031)	(0.007)
InvMills	-0.020	0.002	-0.032	-0.098***
	(0.062)	(0.001)	(0.044)	(0.008)
		Firm Fixed Effects Included		
R-Squared	0.44	0.253	0.68	0.48
Firm-Quarters	7075	7075	4157	8464

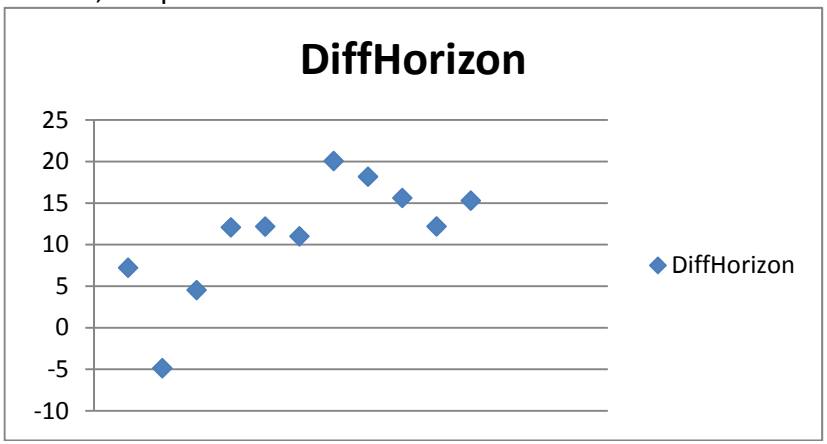
The Heckman procedure consists of a first-stage probit estimation using Size, Num, Loss, Inst, ROA, MB, EarnVol, Cons, RetVol, and lag occurrence to predict the likelihood of guidance occurrence. The inverse mills ratio is used in the second-stage OLS estimation of the effect of guidance sequence on guidance properties. *Sequence* is the Nth guidance issued during the sample period. *Size* is the market value of equity. *Num* is the number of analysts following. *Loss* is an indicator variable equal to 1 if the firm reported a loss in that quarter. *Inst* is the proportion of common shares owned by institutional investors. *LagDV* is the value of the dependent variable in the prior fiscal period. *Horizon* is the number of days between guidance issuance and fiscal period end. *SOX* equals 1 if the observation is related to the post-Sox period (post 2002), and 0 otherwise. *InvMills* is the inverse mills ratio computed from the probit model in the first stage. *Sequence*, *Size*, *Num*, and *Horizon* are divided by 10^1, 10^6, 10^3, and 365, respectively, for expositional purposes. Standard errors reported in parentheses are clustered at the 2-digit SIC and quarter level. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test.





Beta=-0.0001, T-Statistic=-2.29, R-sq=0.30 Beta=-0.0002, T-Statistic=-3.63, R-sq=0.55





Beta=-0.0001, T-Statistic=-0.41, R-sq=-0.10 Beta=1.4719, T-Statistic=2.95, R-sq=0.44

Figure 1.1. Rolling Period Analysis of Differences in Guidance Properties between Frequent and Infrequent Guiders

Plots and statistical tests of the slope of *DiffError*, *DiffBias*, *DiffRange*, and *DiffHorizon* by year are provided in Figure 1.1. Examining the yearly patterns of *DiffError* yields interesting findings. As expected the trend is downward sloping and statistically significant. We find that in the early years the variable is positive but becomes smaller over time and becomes negative in the more recent years. This suggests that the early guidance by frequent guiders is actually *less* accurate than those by occasional guiders and that the frequent guiders get better over time surpassing the occasional guiders in accuracy. The results on bias are similar to those on error with a downward and statistically significant trend. The pattern indicates that the early guidance by frequent guiders is more optimistic than those of the occasional guiders while in the latter years the bias is almost the same across the two groups. The *DiffRange* variable does not show any pattern as is borne out by the statistical test. The *DiffHorizon* variable shows a significant positive trend that is consistent with the initial guidance for any period made by frequent guiders being earlier than the initial guidance made by occasional guiders. This finding is interesting because it suggests that the frequent guiders are getting better than the occasional guiders over time (more accurate, less optimistically biased and maintaining the range) despite issuing guidance progressively earlier.

The results from this analysis also provide some evidence against the self-selection form of learning. The finding that the guidance properties of frequent guiders in the early years are actually worse than the occasional guiders suggests that these firms did not continue to guide because they were initially better at it. Rather it seems that they continue to guide because of a policy or commitment to disclosure and they get better at it over time.

7. Additional Analyses

7.1. Firm-Quarter Rolling Period Analysis and Learning

The analysis in section 5 examining the relation between guidance frequency, guidance properties, and market response was carried out at the firm level. This ensures that a firm appears only once in the analysis and frequent guiders do not swamp the occasional ones in terms on the number of observations. In this section we relax that constraint and carry out the analyses at the firm-quarter level using a rolling period analysis. The advantage of this method is that it allows us to avoid peek-ahead bias. It also allows us to provide additional evidence on learning by evaluating whether accumulating guidance experience affects guidance properties. We use firms' past guidance frequency (*PastFrequency*) as an alternative measure of guidance frequency. *PastFrequency* is the number of quarters a firm has issued guidance prior to the current fiscal period. Since *PastFrequency* varies over time, using this variable in our analysis also makes it possible for us to relax the assumption that a firm's guidance practice is fixed over our 11 year sample period. The dynamic frequency variable also allows for inferences on learning. Since our variables are now measured at the quarter level, we also control for the effect of news in the market response tests. *GoodNews* (*BadNews*) is guidance news defined as management guidance less the most recent consensus forecast scaled by price if news is positive (negative) and zero otherwise.[22] We expect positive coefficients on both *GoodNews* and *BadNews* if the market and analysts react appropriately to the news in the management forecast. To examine whether the market and analysts respond differently to frequent guiders per unit of news, we interact *GoodNews* and *BadNews* with *PastFrequency*. Atiase, Supattarakul, and Tse (2005) and Anilowski et al. (2007) find that a large proportion

[22] Similar to how we estimate guidance error and bias, we use the manager point or open-ended estimate and the mid-point of range estimates to estimate guidance news. We are unable to calculate the news content or the accuracy of qualitative guidance issuances.

of firms are likely to provide guidance bundled along with an earnings announcement. Given that we are using the first guidance announced in the quarter, it is possible that our market reaction measures are affected by a concurrent announcement of earnings of the prior quarter. To control for this issue we include a variable to capture the concurrent earnings surprise. This variable (*EANews*) is measured as the difference between the concurrent earnings and analysts expectations scaled by price for the bundled guidance and zero for the non-bundled guidance. We also include a control variable *AFE* which is the difference between actual earnings for the guidance quarter and the prior consensus analysts forecast scaled by price. We also include firm fixed effects in this analysis to control for any correlated omitted variables when *Error*, *Bias*, *Range*, and *Horizon* are the dependent variables. We estimate the following models (firm and time subscripts have been suppressed):

$$Error = \beta_1 PastFrequency + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 Inst + FirmFixedEffects + \varepsilon \quad (2b)$$

$$Bias = \beta_1 PastFrequency + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 Inst + FirmFixedEffects + \varepsilon \quad (3b)$$

$$Range = \beta_1 PastFrequency + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Horizon + \beta_6 Inst + FirmFixedEffects + \varepsilon \quad (4b)$$

$$Horizon = \beta_1 PastFrequency + \beta_2 Size + \beta_3 Num + \beta_4 Loss + \beta_5 Inst + FirmFixedEffects + \varepsilon \quad (5b)$$

$$MktReaction = \beta_1 PastFrequency + \beta_2 EANews + \beta_3 AFE + \beta_4 Size + \beta_5 Num + \beta_6 Loss + \beta_7 Horizon + \beta_8 Inst + \beta_9 GoodNews + \beta_{10} BadNews + \beta_{11} PastFrequency \times GoodNews + \beta_{12} PastFrequency \times BadNews + \varepsilon \quad (6b)$$

$$ChgConsensus = \beta_1 PastFrequency + \beta_2 EANews + \beta_3 AFE + \beta_4 Size + \beta_5 Num + \beta_6 Loss + \beta_7 Horizon + \beta_8 Inst + \beta_9 GoodNews + \beta_{10} BadNews + \beta_{11} PastFrequency \times GoodNews + \beta_{12} PastFrequency \times BadNews + \varepsilon \quad (7b)$$

Table 1.6. Past Guidance Frequency and Guidance Properties

	Error	Bias	Range	Horizon	MktReaction	ChgConsensus
PastFrequency	-0.001***	-0.002***	0.000	0.059***	0.017***	0.001***
	(0.000)	(0.000)	(0.000)	(0.004)	(0.003)	(0.000)
EANews					-0.318	0.076***
					(0.618)	(0.021)
AFE					1.175***	-0.004
					(0.278)	(0.027)
Size	-0.038***	-0.030***	-0.016***	0.122	0.000	0.000
	(0.008)	(0.009)	(0.004)	(0.177)	(0.000)	(0.000)
Num	-0.181***	-0.038	-0.040***	2.324***	-0.561***	-0.024***
	(0.032)	(0.046)	(0.009)	(0.640)	(0.211)	(0.006)
Loss	0.003***	0.005***	0.001***	0.003	-0.014***	-0.000
	(0.000)	(0.001)	(0.000)	(0.005)	(0.005)	(0.000)
Horizon	0.013***	0.015***	0.001***		0.042***	-0.000
	(0.001)	(0.002)	(0.000)		(0.009)	(0.000)
Inst	-0.006***	-0.007**	-0.002***	0.011	0.002	0.000
	(0.001)	(0.003)	(0.000)	(0.014)	(0.007)	(0.000)
GoodNews					0.537**	0.028
					(0.263)	(0.026)
BadNews					4.022***	0.720***
					(0.614)	(0.068)
PastFrequency*GoodNews					0.096***	0.001
					(0.030)	(0.003)
PastFrequency*BadNews					-0.163**	0.011
					(0.076)	(0.007)
Firm Fixed Effects	Y	Y	Y	Y	N	N
R-squared	0.458	0.261	0.716	0.456	0.082	0.624
Firm-Quarters	8636	8636	5679	9759	7208	6709

PastFrequency is the number of guidance issued prior to the current fiscal quarter. *EANews* is the earnings announcement news scaled by price. AFE is actual EPS minus prevailing analyst' mean consensus forecast. *Size* is the market value of equity. *Num* is the number of analysts following. *Loss* is an indicator variable equal to 1 if the firm reported a loss in that quarter. *Horizon* is the number of days between guidance issuance and fiscal period end. *Inst* is the proportion of common shares owned by institutional investors. *GoodNews* (*BadNews*) is guidance news defined as the management guidance less the most recent consensus forecast scaled by price if news is positive (negative). *Bias* is guidance less actual EPS, scaled by price. *Error* is the absolute value of *Bias*. *Horizon* is the number of days between guidance issuance and fiscal period end. *MktReaction* is the three-day cumulative adjusted returns centered on guidance issuance date. *ChgConsensus* is the difference in analysts' mean consensus forecasts scaled by price. *PastFrequency*, *Size*, *Num*, and *Horizon* are divided by 10, 10^6, 10^3, and 365, respectively, for expositional purposes. Standard errors reported in parentheses are clustered at the 2-digit SIC and quarter level. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test.

Table 1.6 provides results examining the effect of past guidance frequency on guidance properties. The main independent variable in this analysis, *PastFrequency*, is the sum of guidance frequency from the beginning of our sample period to the last quarter. Consistent with results from the earlier tests, the coefficients on *PastFrequency* suggest that guidance frequency is negatively associated with *Error* (β_1 = -0.001, p < 0.01) and *Bias* (β_1 = -0.002, p < 0.01) and positively associated with *Horizon* (β_1 = 0.059, p < 0.01). The coefficient on *PastFrequency* is positive but non-significant for guidance range. The results also suggest that guidance experience is related to the properties of guidance which is consistent with the results on learning documented earlier.

The last two columns provide results examining the effect of past guidance frequency on market and analysts' reactions to guidance. The positive coefficient on *PastFrequency* is consistent with frequent guiders enjoying a premium when they issue guidance (β_1 = 0.017 and 0.001, p < 0.01 and p < 0.01). The coefficients on *BadNews* (β_{10} = 4.022 and 0.720, p < 0.01 and p < 0.01) are also positive and larger than that for *GoodNews* (β_9 = 0.537 and 0.028, p < 0.05 and p>0.10) as expected. Consistent with investors adjusting for greater accuracy and less optimistic bias in guidance issued by frequent guiders as compared with occasional guiders, the coefficient on *PastFrequency*×*GoodNews* is positive and significant (β_{11} = 0.096, p < 0.01). The coefficient on *PastFrequency*×*BadNews* is negative and significant (β_9 =-0.163, p < 0.05) which suggests that markets adjust for the less optimistic bias of frequent guiders as compared with occasional guiders.

Table 1.7. Robustness Test: Post 1998 Data

	Error	Bias	Range	Horizon	MktReaction	ChgConsensus
PastFrequency	-0.001***	-0.002***	0.000	0.051***	0.013***	0.000
	(0.000)	(0.000)	(0.000)	(0.004)	(0.003)	(0.000)
EANews					-0.229	0.066***
					(0.596)	(0.019)
AFE					1.627***	0.009
					(0.351)	(0.021)
Size	-0.030***	-0.021**	-0.015***	0.039	0.053	0.001
	(0.008)	(0.010)	(0.004)	(0.210)	(0.046)	(0.001)
Num	-0.202***	-0.047	-0.040***	2.379***	-0.545**	-0.022***
	(0.036)	(0.049)	(0.009)	(0.731)	(0.213)	(0.006)
Loss	0.003***	0.005***	0.001***	0.002	-0.014***	-0.000
	(0.000)	(0.001)	(0.000)	(0.006)	(0.005)	(0.000)
Horizon	0.014***	0.017***	0.001***		0.034***	-0.000
	(0.001)	(0.002)	(0.000)		(0.010)	(0.000)
Inst	-0.006***	-0.008**	-0.002***	0.000	0.003	0.000
	(0.001)	(0.004)	(0.000)	(0.015)	(0.007)	(0.000)
GoodNews					0.366	-0.010
					(0.376)	(0.016)
BadNews					4.105***	0.843***
					(0.667)	(0.057)
PastFrequency*GoodNews					0.121***	0.006**
					(0.037)	(0.002)
PastFrequency*BadNews					-0.152*	-0.002
					(0.081)	(0.006)
Firm Fixed Effects	Y	Y	Y	Y	N	N
R-squared	0.474	0.265	0.715	0.456	0.078	0.689
Firm-Quarters	7942	7942	5447	9002	6156	5875

This table includes only management forecasts made during 1998-2005 for the firms in our main sample. *PastFrequency* is the number of guidance issued prior to the current fiscal quarter. *EANews* is the earnings announcement news scaled by price. AFE is actual EPS minus prevailing analyst' mean consensus forecast. *Size* is the market value of equity. *Num* is the number of analysts following. *Loss* is an indicator variable equal to 1 if the firm reported a loss in that quarter. *Horizon* is the number of days between guidance issuance and fiscal period end. *Inst* is the proportion of common shares owned by institutional investors. *GoodNews* (*BadNews*) is guidance news defined as the management guidance less the most recent consensus forecast scaled by price if news is positive (negative). *Bias* is guidance less actual EPS, scaled by price. *Error* is the absolute value of *Bias*. *Horizon* is the number of days between guidance issuance and fiscal period end. *MktReaction* is the three-day cumulative adjusted returns centered on guidance issuance date. *ChgConsensus* is the difference in analysts' mean consensus forecasts scaled by price. *PastFrequency*, *Size*, *Num*, and *Horizon* are divided by 10, 10^6, 10^3, and 365, respectively, for expositional purposes. Standard errors reported in parentheses are clustered at the 2-digit SIC and quarter level. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test.

Table 1.8. Robustness Test: Full Sample

	Error	Bias	Range	Horizon	MktReaction	ChgConsensus
PastFrequency	-0.001***	-0.002***	0.000	0.055***	0.018***	0.002***
	(0.000)	(0.000)	(0.000)	(0.003)	(0.003)	(0.000)
EANews					-0.087	0.038
					(0.186)	(0.025)
AFE					-0.005	-0.001
					(0.022)	(0.002)
Size	-0.059***	-0.045***	-0.017***	0.235	0.042	0.000
	(0.022)	(0.017)	(0.005)	(0.193)	(0.047)	(0.001)
Num	-0.180***	-0.007	-0.041***	2.031***	-0.560***	-0.002
	(0.030)	(0.030)	(0.008)	(0.557)	(0.204)	(0.008)
Loss	0.004***	0.004***	0.001***	-0.000	-0.015***	-0.001**
	(0.000)	(0.000)	(0.000)	(0.005)	(0.005)	(0.000)
Horizon	0.014***	0.012***	0.001***		0.038***	0.001*
	(0.001)	(0.001)	(0.000)		(0.008)	(0.000)
Inst	-0.005***	-0.002**	-0.002***	0.012	0.006	0.001**
	(0.001)	(0.001)	(0.000)	(0.010)	(0.006)	(0.000)
GoodNews					0.949***	0.122***
					(0.336)	(0.046)
BadNews					2.212***	0.306**
					(0.534)	(0.130)
PastFrequency*GoodNews					0.087**	-0.008*
					(0.038)	(0.004)
PastFrequency*BadNews					-0.074	0.052***
					(0.075)	(0.012)
Firm Fixed Effects	Y	Y	Y	Y	N	N
R-squared	0.446	0.448	0.665	0.455	0.073	0.593
Firm-Quarters	12552	12552	9003	14805	10641	10052

This table includes all management forecasts made during 1995-2005 and does not require firms to be in existence throughout entire sample period. *PastFrequency* is the number of guidance issued prior to the current fiscal quarter. *EANews* is the earnings announcement news scaled by price. AFE is actual EPS minus prevailing analyst' mean consensus forecast. *Size* is the market value of equity. *Num* is the number of analysts following. *Loss* is an indicator variable equal to 1 if the firm reported a loss in that quarter. *Horizon* is the number of days between guidance issuance and fiscal period end. *Inst* is the proportion of common shares owned by institutional investors. *GoodNews* (*BadNews*) is guidance news defined as the management guidance less the most recent consensus forecast scaled by price if news is positive (negative). *Bias* is guidance less actual EPS, scaled by price. *Error* is the absolute value of *Bias*. *Horizon* is the number of days between guidance issuance and fiscal period end. *MktReaction* is the three-day cumulative adjusted returns centered on guidance issuance date. *ChgConsensus* is the difference in analysts' mean consensus forecasts scaled by price. *PastFrequency*, *Size*, *Num*, and *Horizon* are divided by 10, 10^6, 10^3, and 365, respectively, for expositional purposes. Standard errors reported in parentheses are clustered at the 2-digit SIC and quarter level. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test.

Table 1.9. Guidance Frequency and Guidance Properties (Medians)

	Error		Bias		Range	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
MGQuintile	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log(Size)	-0.000	-0.000	-0.000	-0.000	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num	-0.036	-0.124	0.088	-0.010	0.023	-0.004
	(0.090)	(0.076)	(0.087)	(0.081)	(0.020)	(0.015)
Loss	0.005	0.002	0.002	-0.003	0.004***	0.004***
	(0.003)	(0.002)	(0.004)	(0.002)	(0.001)	(0.001)
Horizon	0.013***	0.013***	0.009*	0.011***	0.001*	0.001
	(0.004)	(0.004)	(0.005)	(0.004)	(0.001)	(0.001)
LitRisk	0.001	-0.001	0.001	-0.001	-0.001**	-0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Inst	-0.001	-0.003**	0.003	-0.001	-0.000	-0.001
	(0.002)	(0.001)	(0.002)	(0.001)	(0.000)	(0.000)
R-squared	0.058	0.063	0.026	0.041	0.155	0.148
Firms	1575	1504	1575	1504	1270	1241

	Horizon		MktReaction		ChgConsensus	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
MGQuintile	0.030***	0.030***	0.005***	0.007***	0.001***	0.001***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.000)	(0.000)
Log(Size)	0.006*	0.005	0.002	0.003	0.001**	0.000*
	(0.003)	(0.003)	(0.002)	(0.002)	(0.000)	(0.000)
Num	-0.219	1.607	0.254	0.277	0.028	0.070*
	(1.055)	(1.011)	(0.473)	(0.472)	(0.037)	(0.036)
Loss	0.023*	0.022	-0.005	-0.007	0.000	0.000
	(0.014)	(0.014)	(0.011)	(0.012)	(0.001)	(0.001)
Horizon			0.061***	0.059***	0.004**	0.004***
			(0.014)	(0.016)	(0.001)	(0.001)
LitRisk	-0.006	0.009	0.008	0.012*	-0.000	0.000
	(0.009)	(0.010)	(0.007)	(0.007)	(0.000)	(0.000)
Inst	0.009	0.070***	0.004	0.018	0.000	0.002**
	(0.017)	(0.018)	(0.011)	(0.012)	(0.001)	(0.001)
R-squared	0.124	0.117	0.036	0.049	0.066	0.062
Firms	1667	1584	1651	1569	1421	1398

This table presents OLS and 2SLS tests of the association between guidance frequency and guidance properties. The 2SLS specification uses the error term from regressing *MGQuintile* on *Loss, LitRisk, Beta, Inst, Num, MBAnalyst,* and *Disp* from the first-stage as an instrumental variable for *MGQuintile* in the second-stage regressions. The results in the table reflect the second-stage regressions. See Appendix for variable definitions. *Size*, *Num*, and *Horizon* are divided by 10^6, 10^3, and 365, respectively, for expositional purposes. Standard errors reported in parentheses are clustered at the 2-digit SIC level. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test.

7.2. Alternative Sample Selection Specifications

7.2.1. Post 1998 Data.. Anilowski et al. (2007) find an increase in the number of forecasts in the database starting in 1998. We choose to use the longer sample period because that increases the power of our primary variable of interest (identifying frequent guiders), especially in the learning analysis in section 5. We believe that ignoring information relating to known guidance quarters prior to 1998 and assuming that a firm commences learning in 1998 is an inferior sample selection choice. On the other hand, it is possible that prior to 1998, First Call did not record guidance issuances from smaller firms that were less well-followed by analysts. This would cause these firms to be incorrectly classified as occasional guiders when in reality they could have been frequent guiders. However this type of potential misclassification would work against our hypotheses by reducing our ability to distinguish between frequent and occasional guiders. To examine the robustness of our results, we also carry out analyses using a sample that commences in 1998. The results of this analysis which are provided in Table 1.7 are similar to those from the primary sample.

7.2.2. Full Sample. Our primary sample is based on firms that are on Compustat throughout the sample period. We also examine the robustness of our results to this specification by using the entire sample of firms. With the exception of the analysis on change in analysts' consensus, the results that are provided in Table 1.8 are largely consistent with the results using our primary sample. The last column shows that the coefficient on *PastFrequency*×*GoodNews* is negative (β_{11} = -0.008, p < 0.1) and the coefficient on *PastFrequency*×*BadNews* is positive (β_{12} = 0.052, p < 0.01).[23]

[23] For robustness, we also control for the number of quarters (*Quarters*) where *Quarters* is the number of quarters a firm is on Compustat during our sample period when we do not include firm fixed effects. The untabulated results are similar to those presented in Table 8.

7.3. Analysis Using Medians

The firm level analysis in section 4 examining the association between guidance frequency, guidance properties and market response was carried out using the mean values of the dependent and independent variables. We also carry out the same analysis using the median values by firm. As Table 1.9 indicates, the results using this specification are similar to the results documented earlier using the mean values.

8. Summary

This paper attempts to further our understanding of guidance behavior by firms and market participants' responses to the guidance. The study differs from previous and contemporaneous work in several ways. First, unlike most prior work, we examine whether a firm's propensity to issue guidance is related to the properties of the guidance as well as market responses to the guidance. Our results suggest that the characteristics and market responses to guidance issued by occasional and frequent guiders differ. Compared to occasional guiders, frequent guiders issue guidance in a timelier manner and their guidance is less biased, more accurate, and more precise. Firms committed to issuing guidance also appear to invest in improving the quality of their guidance, as evidenced by improvements in guidance accuracy. Lastly, we extend the literature by examining whether frequent guiders exhibit patterns in their guidance behavior over time that is consistent with learning. While our results are consistent with an improvement in firms' guidance quality over time, we acknowledge that a caveat of our results is that we are unable to examine *how* firms learn.

Our results are consistent with frequency being an important classificatory variable, with frequent guiders representing a class or type of firm that commits to increased levels of disclosure through their guidance and therefore have different

incentives and processes that affect the properties of the guidance, its market impact, and learning over time.

APPENDIX

Variable Definitions

Size	Ending market value of equity
Loss	Indicator variable coded as 1 if firm reports a loss, 0 otherwise
TotalNews	Actual EPS minus analysts' mean consensus immediately before guidance issuance, scaled by beginning-of-quarter price
PosTotalNews%	Percentage of times TotalNews is greater or equal to zero
ROA	Return on assets
LitRisk	Proxy for litigation risk, equals 1 if firm is in the biotech, retailing, electronics, or computer industry
M/B	End of quarter market to book
P/E	End of quarter price to earnings ratio
EarnVol	Standard deviation of seasonally adjusted quarterly earnings for the 12 quarters before the current fiscal quarter, divided by median assets over the 12 quarters
Beta	Equity beta for the sample period
Inst	Mean proportion of common shares owned by institutional investors
Num	Mean number of analysts following
MBAnalyst	Indicator variable coded as 1 if firm meets or beats analysts' consensus forecast for the fiscal period
Disp	Standard deviation of analysts' forecasts prior to guidance issuance
Segments	Number of business segments
Cons	Proxy for conservatism, total accruals scaled by total assets multiplied by -1
RetVol	Standard deviation of annual stock returns for the fiscal period
Ecomp	Ratio of CEO's equity compensation to total compensation
Wealth	Value of shares held by CEO ($M)
Error	Absolute difference between actual EPS and management guidance, scaled by beginning-of-quarter price
Bias	Guidance minus actual EPS, scaled by beginning-of-quarter price. A positive (negative) value indicates management optimism (pessimism).
Specificity	Ordinal variable for guidance specificity where point, range, open-ended, and qualitative guidance is coded as 4, 3, 2, and 1, respectively
Range	Width of range guidance, scaled by beginning-of-quarter price
Horizon	Number of days between management guidance issuance date and end of fiscal quarter
News	Guidance minus analysts' mean consensus immediately before guidance issuance, scaled by beginning-of-quarter price
MktReaction	Three-day cumulative adjusted returns centered on guidance issuance date
ChgConsensus	Change in analysts' mean consensus before and after guidance issuance, scaled by beginning-of-quarter price

REFERENCES

Ajinkya, B. and M. Gift. "Corporate managers' earnings forecasts and symmetrical adjustments of market expectations." *Journal of Accounting Research* 22 (1984): 425-444.

Ajinkya, B., S. Bhojraj, and P. Sengupta. "The association between outside directors, institutional investors and the properties of management earnings forecasts." *Journal of Accounting Research* 43 (2005): 343-376

Anilowski, C., M. Feng, and D. Skinner. "Does earnings guidance affect market returns? The nature and information content of aggregate earnings guidance." *Journal of Accounting and Economics* 44 (2007): 36-63.

Arrow**,** K. 'Economic welfare and the allocation of resources for invention,' in R. R. Nelson (ed.), *The Rate and Direction of Inventive Activity*. Princeton University Press: Princeton, NJ, (1962): 609–625.

Atiase, R., H. Li, S. Supattarakul, and S. Tse. "Market reaction to multiple contemporaneous earnings signals: Earnings announcements and future earnings guidance." *Review of Accounting Studies* 10 (2005): 497-525.

Baik, B., and G. Jiang. "The use of management forecasts to dampen analysts' expectations." *Journal of Accounting and Public Policy* 25 (2006): 531-553.

Baginski, S. P., E. J. Conrad, and J. M. Hassell. "The effects of management forecast precision on equity pricing and on the assessment of earnings uncertainty." *The Accounting Review* 68 (1993): 913-927.

Bamber, L. S. and Y. S. Cheon. "Discretionary management earnings forecast disclosures: Antecedents and outcomes associated with forecast venue and forecast specificity choices." *Journal of Accounting Research* 36 (1998): 167-190.

Bartov, E., D. Givoly, and C. Hayn. "The rewards to meeting or beating analysts' consensus forecasts." *Journal of Accounting and Economics* 33 (2002): 173-204.

Bhojraj, S., P. Hribar, J. McInnis, and M. Picconi. "Making sense of cents: An examination of firms that marginally meet or beat analyst forecasts." *Journal of Finance* 64 (2009): 2361-2388.

Brown, S., S. Hillegeist, and K. Lo. "Conference calls and information asymmetry." *Journal of Accounting and Economics* 37 (2004): 343-366.

Bushee, B. and C. Noe. "Corporate disclosure practices, institutional investors, and stock return volatility." *Journal of Accounting Research* 30 (2000): 171-202.

Chen, S., D. Matsumoto, and S. Rajgopal. “Is silence golden? An empirical analysis of firms that stop giving quarterly earnings guidance.” Working Paper, University of Washington, 2007.

Clement, M., R. Frankel, and J. Miller. “Confirming management earnings forecasts, earnings uncertainty, and stock returns.” *Journal of Accounting Research* 41 (2003): 653-679.

Coller, M. and T. Yohn. “Management forecasts and information asymmetry.” *Journal of Accounting Research* 35 (1997): 181-191.

Cotter, J., I. Tuna, and P. Wysocki. “Expectations management and beatable targets: How do analysts react to explicit earnings guidance?” *Contemporary Accounting Research* 23 (2006): 593-624.

Einhorn, H. and R. Hogarth. “Confidence in judgment: Persistence in the illusion of validity.” *Psychological Review* 85 (1978): 395-416.

Feng, M. and A. Koch. “Once bitten twice shy: The relation between outcomes of earnings guidance and management guidance strategy.” Working Paper, University of Pittsburgh, 2008.

Feng, M., C. Li, and S. McVay. “Internal control and management guidance.” *Journal of Accounting and Economics* 48 (2009) 190-209.

Francis, J., D. Philbrick, and K. Schipper. “Shareholder litigation and corporate disclosure.” *Journal of Accounting Research* 32 (1994): 137-164.

Givoly, D. and C. Hayn. “The changing time-serires properties of earnings, cash flows and accruals: Has financial accounting become more conservative?” *Journal of Accounting and Economics* 29 (2000): 287-320.

Graham, J., C. Harvey, and S. Rajgopal. “The economic implications of corporate financial reporting.” *Journal of Accounting and Economic*s 40 (2005): 3-73.

Houston, J., B. Lev, and J. Tucker. “To guide or not to guide? Causes and consequences of stopping quarterly earnings guidance.” *Forthcoming, Contemporary Accounting Research.*

Huber, G. P. “Organizational learning: The contributing processes and the literature.” *Organization Science* 2 (1991): 88-115.

Hui, K. W., S. Matsunaga, and D. Morse. “The impact of conservatism on management quantitative earnings forecasts.” *Journal of Accounting and Economics* 47 (2009): 192-207.

Hutton, A. and P. Stocken. “Prior forecasting accuracy and investor reaction to management earnings forecasts.” Working Paper, Boston College, 2009.

Jennings, R. “Unsystematic security price movements, management earnings forecasts, and revisions in consensus analyst earnings forecasts.” *Journal of Accounting Research* 25 (1987): 90-110.

Kasznik, R. and B. Lev. “To warn or not to warn: Management disclosures in the face of an earnings surprise.” *The Accounting Review* 70 (1995): 113-134.

Kasznik, R. and M. McNichols. “Does meeting earnings expectations matter? Evidence from analyst forecast revisions and share prices.” *Journal of Accounting Research* 40 (2002): 727-759.

Ke, B. and Y. Yu. “The effect of issuing biased earnings forecasts on analysts’ access to management and survival.” *Journal of Accounting Research* 44 (2006): 965-1000.

King, R., G. Pownall, and G. Waymire. “Expectations adjustment via timely earnings forecast disclosure: review, synthesis and suggestions for future research.” Journal of Accounting Literature 9 (1990): 113-144.

Lang, M. and R. Lundholm. “Corporate disclosure policy and analyst behavior.” *The Accounting Review* 71 (1996): 467-492.

Leuz, C. and R. Verrecchia. “The economic consequences of increased disclosure.” *Journal of Accounting Research* 38 (2000): 91-124.

Lev, B. and S. Penman. “Voluntary forecast disclosure, nondisclosure, and stock prices.” *Journal of Accounting Research* 28 (1990): 49-76.

Libby, R., H. T. Tan, and J. E. Hutton. “Does the form of management earnings guidance affect analysts’ earnings forecasts?” *The Accounting Review* 81 (2006): 207-226.

Libby, R., J. E. Hunton, H. T. Tan, and N. Seybert. “Relationship incentives and the optimistic/pessimistic pattern in analysts’ forecasts.” *Journal of Accounting Research* 46 (2008): 173-198.

Mikhail, M., B. Walther, and R. Willis. “Do security analysts improve their performance with experience?” *Journal of Accounting Research* 35 (1997): 131-157.

Miller, G. “Earnings performance and discretionary disclosure.” *Journal of Accounting Research* 40 (2002): 173-204.

Nagar, V., D. Nanda, and P. Wysocki. “Discretionary disclosure and stock-based incentives.” *Journal of Accounting and Economics* 34 (2003): 283-309.

Patell, J. M. “Corporate forecasts of earnings per share and stock price behavior: Empirical tests.” *Journal of Accounting Research* 14 (1976): 246-276.

Penman, S. H. “An empirical investigation of the voluntary disclosure of corporate earnings forecasts.” *Journal of Accounting Research* 18 (1980): 132-160.

Richardson, S., S. H. Teoh, and P. Wysocki. “The walk-down to beatable analyst forecasts: The role of equity issuance and insider trading incentives.” *Contemporary Accounting Research* 21 (2004): 885-924.

Rogers, J., D. Skinner, and A. Van Buskirk. “Earnings guidance and market uncertainty.” *Journal of Accounting and Economics* 48 (2009): 90-109.

Skinner, D. “Why firms voluntarily disclose bad news.” *Journal of Accounting Research* 32 (1994): 38-60.

Skinner, D. “Earnings disclosures and stockholder lawsuits.” *Journal of Accounting and Economics* 23 (1997): 249-282.

Soffer, L., R. Thiagarajan, and B. Walther. “Earnings preannouncement strategies.” *Review of Accounting Studies* 5 (2000): 5-26.

Venkataraman, S., D. E. Hirst, and L. Koonce. “Management earnings forecasts: A review and framework.” *Accounting Horizons* 22 (2008): 315-338.

Verrecchia, R. “Discretionary disclosure.” *Journal of Accounting and Economics* 5 (1983): 179-194.

Verrecchia, R. “Information quality and discretionary disclosure.” *Journal of Accounting and Economics* 12 (1990): 365-380.

Wang, I. “Private earnings guidance and its implications for disclosure regulation.” *The Accounting Review* 82 (2007): 1299-1332.

Waymire, G. “Earnings volatility and voluntary management forecast disclosure.” *Journal of Accounting Research* 23 (1985): 268-295.

Williams, P. A. “The relation between a prior earnings forecast by management and analyst response to a current management forecast.” *The Accounting Review* 71 (1996): 103-115.

Zollo, M. and S. Winter. **“**Deliberate learning and the evolution of dynamic capabilities.” *Organization Science* 13 (2002): 339-351.

CHAPTER TWO:
THE EFFECTS OF MANAGERS' GUIDANCE CREDIBILITY ON INVESTORS AND ANALYSTS

Abstract

I examine whether investors and analysts recognize differences in individual managers' guidance accuracy and bias, and if they tailor their responses to management guidance. I find that investors react more strongly and assign more credibility to managers who have greater guidance accuracy, and that investors adjust for guidance bias by reacting more positively (less negatively) to good (bad) news guidance issued by managers who are more pessimistic. However, the results for the changes in analysts' consensus forecasts suggest that analyst experience plays an important role in their responses to management guidance. I find that in their forecast revisions, analysts adjust for managers' guidance accuracy and bias only if the analysts themselves have sufficient forecasting experience.

Keywords: Management Credibility, Earnings Guidance, Management Styles

*****

"Here's the screw-up: You made a promise that you'd deliver this and you missed three weeks later. Jeff [Immelt] has a credibility issue. He's getting his a-- kicked. He apologized." – former GE CEO Jack Welch on his successor Jeffrey Immelt after GE promised that the company would meet expectations but subsequently reported a 6% fall in earnings. (CNBC April 2008)

1. Introduction

This paper examines whether investors and analysts recognize differences in managers' guidance accuracy and bias, and if they tailor their responses to management guidance. Managers' influence on firm policies has gained interest in the accounting literature recently and several studies provide evidence consistent with managers' individual preferences having an effect on firms' voluntary disclosure and financial reporting decisions.[1] In this study, I build on this growing stream of literature and investigate whether market participants recognize differences in individual managers' voluntary disclosure behavior. I examine whether investors and analysts incorporate differences in managers' guidance accuracy and bias into their responses to firms' earnings guidance.

Although management credibility is an intensively researched topic, little is known about how investors and analysts assess the credibility of individual managers. Prior work examining the effects of firms' guidance behavior on analysts and investors shows that analysts and investors find earnings guidance to be more believable if firms issued guidance with higher accuracy in the past (Williams 1996; Hutton and Stocken 2009). Experimental evidence also suggests that analysts and investors perceive management as more credible and trustworthy if it has issued earnings warnings prior to a negative earnings surprise or if it has followed certain preannouncement strategies (Libby and Tan 1999; Tan, Libby, and Hunton 2002). However, prior studies that examine the credibility of earnings guidance generally assume that a firm's guidance record is attached to the firm or its management team, and do not differentiate between the reputation of a firm and that of an individual manager (Williams 1996; Libby and Tan 1999; Tan et al. 2002; Rogers and Stocken

[1] See Bertrand and Schoar (2003), Bamber, Jiang, and Wang (2008), Dyreng, Hanlon, and Maydew (2009), Ge, Matsumoto, and Zhang (2009).

2005; Hutton and Stocken 2009). A growing number of studies provide evidence indicating that managers play a significant role in determining firms' accounting decisions (Bamber et al. 2008; Ge et al. 2009). These studies examine the effect of individual managers' styles on firms' voluntary disclosure and financial reporting decisions, and find that individual manager characteristics explain much of the variation in firms' earnings guidance and accounting choices. Therefore, in this study, I distinguish between firm and manager-level behavior by examining the effects of guidance credibility at the level of the individual manager. Whether market participants recognize and adjust for differences in managers' guidance behavior is an important empirical question, because in a rational expectations environment, investors should, and do, adjust for the predicted bias in firms' guidance issuances (Fischer and Verrecchia 2000; Rogers and Stocken 2005). However, if investors and analysts do not expect to find any differences in individual managers' guidance styles, it is questionable whether they will identify and adjust for the manager-specific effects in their reactions to firms' earnings guidance.

I begin my analysis by measuring the manager effects of individual managers on firms' guidance accuracy and bias. I use the ExecuComp database to identify managers who are employed by at least two firms with a minimum of three years' tenure in each firm. I also require that managers must have issued guidance during their tenure at each firm. This sample selection restriction makes it possible for me to separate the effects of managers from firm and year fixed effects. The manager positions in my sample include the CEOs, CFOs, and other top executives listed in the ExecuComp database. I examine the effects of managers on their earnings guidance by estimating management guidance accuracy and bias as a function of manager fixed effects, firm fixed effects, year fixed effects, and additional control variables. This approach generates a parameter estimate of each manager's effect on his/her firm's

guidance issuances. Following prior research, I measure guidance credibility as the stock price reaction or analyst response to guidance (Jennings 1987; Williams 1996; Hutton and Stocken 2009). This provides a joint test of whether market participants recognize and also adjust for managers' guidance differences. My results show that investors take into account managers' guidance behavior when responding to firms' guidance. I find that investors assign more credibility to accurate managers by reacting more positively (negatively) to their good (bad) news, and that they also adjust for guidance bias by reacting more positively to good news and less negatively to bad news guidance issued by pessimistic managers.

However, my results on the change in analysts' consensus forecasts in response to management guidance suggest that analysts only consider managers' guidance behavior when responding to bad news, but not to good news guidance. My finding of an asymmetric analyst response to good news and bad news could be attributable to two explanations: 1) the inherent credibility of bad news and 2) lack of experience for novice analysts. I conduct additional analyses and provide results that are consistent with analyst forecasting experience playing a role in their responses to management guidance. When I separate analysts' individual forecasts into two groups based on their general forecasting experience, I find that analysts with above average experience take into account manager's guidance accuracy and bias into their responses for both good news and bad news guidance. Consistent with an asymmetric response to different types of news, the changes in analysts' forecasts are also stronger for bad news than for good news.

The above results indicate that investors and experienced analysts recognize and adjust for the heterogeneity in managers' guidance behavior. These findings should be of interest to academics as they document that manager-specific guidance behavior, which has been mostly ignored in the literature, is a significant determinant

of management credibility. These findings should also be of interest to practitioners, as they suggest that managers' concerns about establishing a reputation for accurate and transparent voluntary disclosures are legitimized by investors' and analysts' reactions to management guidance.

This paper makes the following contributions: First, it adds to the vast literature on voluntary disclosures by documenting the effects of managers on firms' earnings guidance. With the exception of Bamber et al. (2008) and Brochet, Faurel, and McVay (2009), the literature on management guidance to date has mostly ignored the effects of managers and focused mainly on examining the relation between guidance outcomes and temporal firm characteristics. For example, prior studies argue that firms are more likely to issue guidance when analysts are optimistic (Cotter, Tuna, and Wysocki 2006), when litigation risk is high (Skinner 1994), when communicating bad news (Kasznik and Lev 1995), and when analyst following and institutional ownership are high (Ajinkya, Bhojraj, and Sengupta 2005). This study adds to the management guidance literature by showing that managers also have a significant impact on guidance properties, incremental to firm and year fixed effects and time-varying firm characteristics. The results also indicate that there is significant variation in managers' guidance credibility with some managers being more accurate than others.

Second, this paper contributes to the literature on market responses to guidance and documents that individual managers' guidance behavior is recognized by both investors and analysts. My results complement prior studies that examine the effects of firms' guidance credibility (Williams 1996; Libby and Tan 1999; Tan et al. 2002; Rogers and Stocken 2005; Hutton and Stocken 2009) by documenting that manager-specific credibility also plays an important role beyond firm-specific effects. Finally, three concurrent studies employ a similar methodology to investigate whether

managers have unique styles of their own that are reflected in the earnings guidance, financial reporting, and tax avoidance choices of the firms for which they work (Bamber et al. 2008; Dyreng et al. 2009; Ge et al. 2009).[2] I extend this burgeoning stream of literature on manager-specific effects by examining whether these effects are recognized by market participants. To my knowledge, this is the first study to document the consequences to managers for having a style of his/her own.

The paper is organized as follows. Section II reviews prior literature and develops the hypotheses. Section III describes my data sources and the research design. I report descriptive statistics and empirical results in sections IV and V. Section VI discusses additional analyses. Section VII concludes.

2. Prior Literature and Hypothesis Development

2.1. Manager Effects on Earnings Guidance

My paper is related to prior research that examines the effects of managers on corporate behavior. Bertrand and Schoar (2003) study differences in "style" for a set of 500 managers listed in the ExecuComp database from 1992 to 1999. These authors follow managers across different firms over time to examine whether systematic manager effects are correlated with a wide range of firm policies. Their results indicate that manager-specific effects explain a significant portion of the heterogeneity we observe in firms' investing, financing, and organizational practices. They also find that a manager's style is related to his/her educational background and birth cohort with MBA degree-holders being more aggressive and older managers being more conservative.

[2] Dyreng et al. (2009) examine the effects of managers on firms' effective tax rates while Ge et al. (2009) examine the effects of CFOs on a range of corporate financial reporting choices and outcomes. The variables examined include discretionary accruals, operating leases, expected rate of return for pension assets, earnings smoothing, likelihood of meeting/beating analysts' forecasts, and the likelihood of accounting misstatements.

Several recent studies in the finance and accounting literature provide evidence of a relation between CEO characteristics and firm policies or CEO personal events and firm performance. For example, Malmendier and Tate (2008) find that overconfident CEOs are more acquisitive; Schrand and Zechman (2009) find that overconfident executives are more likely to commit fraud. Bennedson, Perez-Gonzalez, and Wolfenzon (2007) and Liu and Yermack (2007) show that declines in firm performance are correlated with deaths of CEO family members and with purchases of personal real estate. Malmendier and Tate (2009) report evidence that CEOs who are named as "Best Managers" by *Business Week* underperform relative to their peers after winning the award.

Despite the findings in the finance and earnings management literature, attention to the effects of managers in the voluntary disclosure literature has been limited. Brochet et al. (2009) examine management guidance that is issued around CFO turnovers and shed light on how managers affect firms' guidance. While their focus is not on an individual manager's guidance behavior over time, their findings are consistent with managers playing an important role in the guidance issuance process. Bamber et al. (2008) examine the role of managers by using a sample of earnings guidance issuances from 1995 to 2005. Their results also indicate that managers have a significant impact on firms' guidance, and that in most cases, CEOs matter more than CFOs. Bamber et al. (2008) also find that manager-specific guidance styles are correlated with observable managerial characteristics. Their results indicate that managers born prior to World War II and managers with MBA degrees are more conservative.[3]

[3] Although Bertrand and Schoar (2003) and Ge et al. (2009) do not examine the effects of managers on guidance, they find that managers with MBA degrees in their samples are more aggressive in their capital expenditure and financial reporting decisions.

Although the contemporaneous studies discussed above examine the effects of managers on guidance, they do not examine whether differences in managers' guidance accuracy and bias affect their personal reputation. Because I am interested in the reputational effects to managers, I focus on two guidance outcomes that prior research has shown to affect investors' and analysts' reactions to guidance: accuracy and bias.

2.2. Investors' and Analysts' Reactions to Guidance

Prior research provides both empirical and experimental evidence on investors' and analysts' reactions to management guidance. When controlling for the total amount of news, Soffer, Thiagarajan, and Walther (2000) find that firms that issue pessimistic preannouncement news have less negative returns than firms that are optimistic, i.e., firms can affect the overall market reaction to news by adopting a pessimistic disclosure strategy. Rogers and Stocken (2005) report that firms are more likely to bias guidance when it is harder for investors to assess the truthfulness of their guidance. Their tests of the stock price response to guidance also suggest that investors filter out the bias in good news guidance and extreme observations of bad news guidance. Hutton and Stocken (2009) examine whether investors find guidance more credible if it is issued by a firm with a guidance reputation and they find that investors' reactions to guidance news increase with a firm's prior guidance accuracy. These three studies suggest that the market takes into account firms' guidance accuracy and bias in their responses to guidance.

Williams (1996) examines the relation between analysts' forecast revisions and firms' prior guidance accuracy. She finds that changes in the analysts' consensus to good news guidance are greater if the firm's guidance that was issued in the prior period was more accurate. However, changes in the analysts' consensus in response to

bad news guidance are not conditional on firms' prior guidance accuracy. Tan et al. (2002) conduct an experiment to examine how analysts' forecasts are affected by firms' guidance strategies. They find that analysts forecast the highest earnings for firms that overstate (understate) the magnitude of their total negative (positive) news, i.e., firms that issue pessimistic guidance receive higher analysts' forecasts. Although the discussion above suggests that the accuracy and bias of firm's guidance affect analysts, other studies provide indirect evidence that analysts may not always respond appropriately to management guidance. Matsumoto (2002) and Cotter et al. (2006) examine the effects on analysts of private and public earnings guidance and find that firms are more likely to meet or beat analysts' consensus forecasts when guidance is provided in the quarter. However, they do not directly test the association between guidance accuracy and bias on changes in analysts' consensus forecasts. Therefore, their results could be attributable either to firms issuing pessimistic guidance and analysts responding accordingly, or to firms issuing accurate guidance and analysts not fully adjusting their forecasts, or both.

My discussion of prior research suggests that guidance accuracy and bias are the main determinants of management credibility for both investors and analysts. However, none of these studies addresses the determinants at the individual manager level, despite managers' beliefs of developing a reputation for voluntary disclosures (Graham, Harvey, and Rajgopal 2005). Therefore, based on the discussion above, my hypotheses are as follows:

H1a: Investors' reactions to good (bad) news guidance are stronger for managers with higher guidance accuracy.

H1b: Investors' reactions to good (bad) news guidance are more positive (less negative) for managers with higher guidance pessimism.

H2a: Analysts' reactions to good (bad) news guidance are stronger for managers with higher guidance accuracy.

H2b: Analysts' reactions to good (bad) news guidance are more positive (less negative) for managers with higher guidance pessimism.

3. Data and Research Design

3.1. Sample Construction

My initial sample comprises all managers listed in the ExecuComp database from 1995 to 2006. I follow managers over time and retain only those that switch firms at least once during my sample period. This makes it possible for me to separate the manager fixed effects from firm fixed effects and time-varying firm characteristics. If a manager stays with the same firm during my entire sample period, then the manager fixed effects would be perfectly correlated with the firm fixed effects. The manager positions in my sample, whom I identify by using the variable *titleann* in ExecuComp, include the CEOs, CFOs, and other top managers on file. I follow Bertrand and Schoar (2003) and further require that the manager must have been employed by both firms for at least three years. Thus, I ensure that the manager has sufficient time to impose his views on the firm. I note that the manager fixed effects are weaker when I include all manager turnovers in the ExecuComp database, but remain statistically significant when I exclude guidance issued during the first year of a manager's tenure. For each firm that satisfies these requirements, I keep all observations with available data even if the firm has managers that I do not observe in multiple firms. I do not include these unidentified managers in the manager fixed effect estimation. I subsequently merge in the First Call Company Issued Guidelines (CIG) file and retain only managers that issue quarterly guidance in both firms. I include only forecasts of quarterly earnings per share on a primary basis exclusive of

extraordinary items in the sample. To assure comparability, I use actual earnings reported on the First Call Actuals file to compute guidance error and bias. I then merge data from Compustat, CRSP, and IBES to construct the firm characteristics, market reaction, and analysts' forecast revision variables. The final sample of 5,147observations comprises 479 managers across 709 firms. 18% of the observations are earnings announcements or earnings warnings that are released after the end of the firms' fiscal periods. I also include guidance revisions to increase the power of my tests. Excluding either preannouncements or revisions from my sample does not weaken my results.

3.2. Research Design

To examine whether investors and analysts take into account manager-specific guidance accuracy and bias and incorporate this information in their responses to management guidance requires estimating the manager-specific effects on guidance. I follow Bertrand and Schoar (2003) and estimate the models below to obtain the individual manager effects on a firm's guidance accuracy and bias.

$$Error = \sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \gamma_m Exec_m + \varepsilon_{it} \quad (1)$$

$$Bias = \sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \gamma_m Exec_m + \varepsilon_{it} \quad (2)$$

I define the first dependent variable, *Error*, as the absolute difference between the management forecast and actual earnings, scaled by the firms' end-of -quarter closing price. As a robustness check, I use beginning-of-quarter price as a scalar for all the guidance related variables. My results are robust to this specification.

The second dependent variable, *Bias*, is actual earnings minus the management forecast, scaled by end-of-quarter price. Therefore, a positive value for *Bias* suggests that the management guidance is pessimistic. X is a vector of time-varying control

variables that prior studies find is associated with guidance characteristics. I control for the logged market value of firm equity (*Size*) because prior studies find that guidance issuances by larger firms tend to be more accurate and pessimistic (Ajinkya et al. 2005; Bhojraj, Libby, and Yang 2009). I also include the number of analysts following (*Num*) because Lang and Lundholm (1996) find that more heavily followed firms have higher disclosure levels. Firms that report losses may have more difficulty forecasting earnings, so I set *Loss*, which is an indicator variable, equal to one for firms that report negative earnings in the fiscal quarter. As my proxy for performance, I use return on assets (*ROA*), as Miller (2002) finds that disclosure quality declines with weaker earnings performance. I define earnings volatility (*EarnVol*) as the standard deviation of quarterly earnings for the 12 quarters before the current fiscal quarter, divided by median assets over 12 quarters. Ajinkya et al. (2005) find that firms with higher earnings volatility issue guidance with lower accuracy. Following prior studies, I also include market-to-book (*M/B*) as a proxy for proprietary costs because of its negative association with guidance. However, I can also consider *M/B* as a proxy for the information asymmetry between managers and market participants, which would then predict a positive association between *M/B* and guidance (Verrecchia 1990).

I control for year and firm fixed effects by including an indicator variable for each year ($Year_t$) and an indicator variable for each firm ($Firm_i$). I estimate the manager fixed effects by using $Exec_m$**,** my main variable of interest. The manager positions in my sample include the *CEO*, *CFO*, and *Other*. The *Other* category comprises COOs, chairmen, presidents, or subdivision CEOs, and subdivision presidents. I include managers in the *Other* category to be consistent with prior and concurrent studies, such as Bertrand and Schoar (2003), Bamber et al. (2008), and

Dyreng et al. (2009), but the inferences remain the same if I remove this category from the sample.

The advantage of the specification above is that it produces a coefficient for each manager in my sample and I can use that coefficient to quantify each manager's guidance behavior. I remove firm-quarters where the firm has managers that I do not observe in multiple firms. These observations are dropped from the remaining analyses since they are no longer necessary for tests of H1 and H2. This procedure results in 1,182 observations with only forecasts issued by managers whose fixed effects I have estimated. I examine my main research question by estimating the following models and utilizing the manager fixed effect estimates obtained from equations (1) and (2):

$$\begin{aligned} Mkt\,\mathrm{Re}action = &\sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \gamma_m ExecError_m \\ &+ \sum \delta_m ExecError_m \times GoodNews_{it} + \sum \theta_m ExecError_m \times BadNews_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

$$\begin{aligned} Mkt\,\mathrm{Re}action = &\sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \gamma_m ExecBias_m \\ &+ \sum \delta_m ExecBias_m \times GoodNews_{it} + \sum \theta_m ExecBias_m \times BadNews_{it} + \varepsilon_{it} \end{aligned} \quad (4)$$

$$\begin{aligned} ChgConsensus = &\sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \gamma_m ExecError_m \\ &+ \sum \delta_m ExecError_m \times GoodNews_{it} + \sum \theta_m ExecError_m \times BadNews_{it} + \varepsilon_{it} \end{aligned} \quad (5)$$

$$\begin{aligned} ChgConsensus = &\sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \gamma_m ExecBias_m \\ &+ \sum \delta_m ExecBias_m \times GoodNews_{it} + \sum \theta_m ExecBias_m \times BadNews_{it} + \varepsilon_{it} \end{aligned} \quad (6)$$

As in equations (1) and (2), I include firm fixed effects to control for the strong association between firms and managers. *MktReaction* is the sum of market-adjusted returns for the three day trading window centered on the guidance issuance date. *ChgConsensus* is the change in analysts' consensus forecasts before and after management issues guidance. *ExecError* (*ExecBias*) is each manager's fixed effect on *Error* (*Bias*) estimated from equations (1) and (2). *News* is management guidance

minus the prevailing analysts' consensus forecast, scaled by end-of-quarter price. *GoodNews* (*BadNews*) is equal to guidance news if *News* is positive (negative) and zero otherwise. I follow the asymmetric reaction documented in past studies such as Jennings (1987), Williams (1996), and Hutton and Stocken (2009), using this specification to allow the coefficients on *GoodNews* and *BadNews* to vary due to the asymmetric reaction. Based on H1a and H2a, I predict that the coefficients on *ExecError*×*GoodNews* and *ExecError*×*BadNews* will be negative, because reactions to guidance should be negatively associated with guidance error. I also predict if investors adjust for manager pessimism by reacting more positively to good news and less negatively to bad news, then the coefficients on *ExecBias*×*GoodNews* will be positive and *ExecBias*×*BadNews* will be negative. In contrast, if investors and analysts do not consider differences in managers' guidance, then the coefficients for all the interaction terms will be not be significantly different from zero. The control variables are similar to those used in equations (1) and (2), except for the inclusion of the news variables. Standard errors are clustered at the firm level to account for correlation of the residuals.[4] Finally, following Bertrand and Schoar (2003), I weigh each manager fixed effect estimate by its inverse of the standard error to account for measurement error.

4. Descriptive Statistics

Table 2.1 summarizes the 479 manager transitions across positions. The table shows that, 56 are managers who moved from a CEO position in one firm to a CEO position in another firm, one is a CEO who becomes a CFO, and 29 are CEOs who

[4] I include both firm dummies and clustered standard errors in my model because it is necessary to have both when a model is not correctly specified. Firm dummies can be used to correct the standard errors if a model is correctly specified. Since this is unlikely to be the case in my empirical tests, I include firm fixed effects to control for unobserved firm factors and clustered standard errors to adjust for correlation between the residuals. See Petersen (2009) for a more detailed discussion.

move to a top position at another firm. Of the managers who start as CFOs, ten become CEOs, 77 move to other CFO positions, and 18 move to another top position, and 126 managers who start in a top position become a CEO or CFO at another firm. In untabulated results, I analyze differences in the size of the sample firms across the manager transitions. I find that managers in CEO or CFO positions are more likely to move to a new company when the hiring company is larger. Managers in non-CEO or non-CFO positions at larger firms are more likely to move to a smaller company to become the new CEO or CFO.

In Table 2.1, the second row of each cell presents the percentage of the type of position transition relative to the overall sample. The percentages reported in Dyreng et al. (2009) are displayed in brackets.[5] Generally, the reported frequencies of the different types of manager transitions are similar between this study and theirs.

Table 2.1. Frequency of Manager Changes

	Current Title			
Prior Title	CEO	CFO	Other	Total
CEO	56	1	29	86
	11.69%	0.21%	6.05%	
	[10.90%]	[0.33%]	[6.23%]	
CFO	10	77	18	105
	2.09%	16.08%	3.76%	
	[3.67%]	[17.57%]	[2.56%]	
Other	112	14	162	288
	23.38%	2.92%	33.82%	
	[24.14%]	[3.45%]	[31.15%]	
Total	178	92	209	479

This table summarizes the 479 manager transitions across firms and positions. The first entry in each cell reports the number of transitions from the row position to the column position. The second entry in each cell reports the percentage of the type of position transition compared to the overall sample. The table shows the percentage of the type of position transition reported in Dyreng, Hanlon, and Maydew (2009) in brackets for comparison. "*Other*" refers to any job title other than CEO or CFO reported in the ExecuComp database.

[5] I note that the number of managers in Dyreng et al. (2009) is 899 and thus larger than that of my sample. The difference is due to my requirement that managers issue guidance in both firms he/she worked for. This manager selection criterion significantly reduces the number of managers in my sample.

Table 2.2. Descriptive Statistics

	Manager Fixed-Effects Sample				First Call Population			
Variable Name	**N**	**Mean**	**Median**	**Std**	**N**	**Mean**	**Median**	**Std**
Guidance Characteristics								
Error	5,147	0.0061	0.0013	0.1241	15,253	0.0074	0.0018	0.0569
Bias	5,147	-0.0033	0.0000	0.1242	15,253	-0.0040	0.0000	0.0573
Firm Characteristics								
Size	5,147	7.6297	7.4581	1.5437	15,253	6.7325	6.6331	1.6924
Loss	5,147	0.1817	0.0000	0.3856	15,253	0.2091	0.0000	0.4067
Roa	5,147	0.0106	0.0136	0.0442	15,253	0.0086	0.0124	0.0420
EarnVol	5,147	0.0253	0.0119	0.0872	15,253	0.0244	0.0122	0.0688
Num	5,147	9.7789	8.0000	7.0095	15,253	7.1983	5.0000	6.0595
M/B	5,147	3.0552	2.3729	26.6961	15,253	2.6233	2.1452	37.0656
News	5,147	-0.0009	-0.0002	0.0150	15,253	-0.0026	-0.0004	0.4277

This table reports descriptive statistics for the guidance properties and firm characteristic variables. The "Manager Fixed-Effects Sample" refers to the set of firm-quarter observations for firms that issue quarterly guidance and have at least one manager observed in multiple firms for a minimum of three years at each firm during 1995-2006. "First Call population" refers to all firm-quarter observations for firms that issue quarterly guidance and have available firm characteristics information on Compustat during 1993-2006. *Error* is the absolute difference between the management forecast and actual earnings, scaled by the end-of-quarter price. *Bias* is actual earnings minus the management forecast, scaled by the end-of-quarter price. *Size* is the logged market value of firm equity at quarter end. *Loss* is an indicator variable equal to one if the firm reported a loss. *ROA* is return on ending total assets. *EarnVol* is the standard deviation of quarterly earnings for the twelve quarters before the current fiscal quarter, divided by median assets over 12 quarters. *Num* is number of analysts following before guidance issuance. *M/B* is ending market to book. *News* is the management forecast minus prevailing analysts' consensus, scaled by the end-of-quarter price.

Table 2.2 provides descriptive statistics for the main variables in my analyses. Columns 1 to 4 report summary statistics for the manager-firm matched sample. For comparison, columns 5 to 8 report equivalent summary statistics for all firms listed on the First Call CIG file with financial statement information available on Compustat for the period 1993 to 2006. Similar to Bertrand and Schoar (2003), the firms in my sample are larger (7.6297 vs. 6.7325, $p<0.01$) than the First Call population average and have a higher number of analysts following (9.7789 vs. 7.1983, $p<0.01$). This is due to the fact that my sample is limited to managers who only move among the top positions in the firms covered by the ExecuComp database. Managers who move to private firms, or to positions within large firms but below the top five levels, are dropped during my sample selection process. The firms in my sample are less likely to report losses (0.1817 vs. 0.2091, $p<0.01$) and have slightly higher return on assets (0.0106 vs. 0.0086, $p<0.10$). Their guidance are also more accurate (0.0061 vs. 0.0074, $p<0.01$) and less optimistically (-0.0033 vs. -0.0040, $p<0.01$) biased compared to the average First Call firm.

5. Results

5.1. Manager Effects on Guidance

Table 2.3 reports the results of my analyses of the effect of managers on firms' guidance error and bias. Panel A of Table 2.3 reports the results for estimating equations (1) and (2). For each dependent variable, row 1 reports the adjusted R-square from a base regression that excludes the manager fixed effects. Row 2 reports the F-statistic and associated p-value from tests of the joint significance of the manager fixed effects, and the adjusted R-square when I add the manager indicator variables to the regression. For both *Error* and *Bias*, the explanatory power of the

model increases by 2% when I include manager fixed effects.[6] Following Dechow (1994) and Subramanyam (1996), I use a likelihood ratio test suggested by Vuong (1989) to statistically examine whether a model that accounts for managers explains more of the dependent variables. Using a one-tailed test for both of the guidance property variables, the Vuong statistic (untabulated) is significant at the 5% level. The F-statistics show that the manager fixed effects are significant at less than the 1% level. Consistent with Bamber et al. (2008), I find that managers play a significant role in firms' guidance decisions.

Panel B of Table 2.3 reports the distribution of the manager fixed effect coefficients estimated from Panel A. I provide the mean, 25th percentile, median, 75th percentile, and standard deviation. The results show that there is significant variation in the manager fixed effects. For example, the difference in *Error* for a manager at the 75th percentile and a manager at the 25th percentile is 1.4% of price. I note that the average guidance error in my sample is only 0.6% of price, and that while the average bias in guidance is -0.3% of price, a manager at the 75th percentile in the *Bias* distribution issues guidance that is 0.7% (of price) less optimistically biased than a manager at the 25th percentile. These results suggest that managers have heterogeneous effects on guidance properties, and that the effects are economically significant.[7]

[6] In untabulated analyses, I also study the manager fixed effects for CEO, CFO, and Other, and find that CFOs have the strongest effect on guidance. However, I do not conduct separate tests for the three different manager positions in my following tests due to sample size constraints.

[7] In an earlier draft of this paper, I also find that managers have an effect on the timing and frequency of guidance issuances. However, I focus on accuracy and bias in this draft given prior research suggests that they are the two main determinants of management credibility.

Table 2.3. Manager Fixed Effects

Panel A: Test of Manager Fixed Effects on Guidance

Variable	Test of fixed effects on managers	N	Adjusted R-sq
Error		5,147	49%
Error	6.53 (<0.0001)	5,147	51%
Bias		5,147	40%
Bias	5.10 (<0.0001)	5,147	42%

Panel B: Descriptive Statistics of the Manager Fixed Effects

Variable	Sig 10%	Mean	P25	Median	P75	Std	P75 – P25
ExecError	101	0.0456	0.0366	0.0422	0.0504	0.0182	0.0100
ExecBias	67	-0.0122	-0.0147	-0.0096	-0.0072	0.0189	0.0075

Panel A reports the results from fixed-effects panel regressions with controls for time-varying firm characteristics and standard errors clustered at the firm level. For each dependent variable reported in column 1, the fixed effects included are row 1: firm and year fixed effects; and row 2: firm, year, and manager fixed effects. The vector of control variables includes *Size*, *Loss*, *ROA*, *EarnVol*, *Num*, and *M/B*. F-tests (F-statistics and associated p-value) for the joint significance of the manager fixed effects are reported. See Table 2.1 for variable definitions.

Panel B reports the manager fixed-effect coefficients estimated from the following model:

$$(Error,\ Bias) = \sum \alpha_k X_{kit} + Year\ Fixed\ Effects + Firm\ Fixed\ Effects + Manager\ Fixed\ Effects + \varepsilon_{it}$$

I estimate the fixed effects based on a sample of 5,147 quarterly guidance issued by 479 managers. Column 2 reports the number of manager fixed effects significant at the 10% level. Column 3 reports the mean fixed effect for *Error* and *Bias*. Columns 4, 5, 6, and 7 report the fixed effects at the 25th, 50th, and 75th percentile, and the standard deviation, respectively. The last column reports the fixed effect differences between the 75th and 25th percentiles.

5.2. Market Reaction to Guidance and Managers' Guidance Behavior

Table 2.4 shows the results for tests of H1. The dependent variable is the market reaction (*MktReaction*) to guidance. I use abnormal returns as my proxy for the three-day window centered on the guidance issuance date. I regress *MktReaction* on the manager fixed-effects coefficients reported in the previous section, interacted with *GoodNews* and *BadNews* and a list of control variables with controls for firm and year fixed effects. If investors do not recognize differences in managers' guidance behavior, then the coefficients on *ExecError, ExecBias*, and the interaction terms should not be significantly different from zero. Column 3 of Table 2.4 shows that the signs on *ExecError*×*GoodNews* and *ExecError*×*BadNews* are negative (δ=-0.3883 and θ=-0.2841, $p<0.05$ and $p<0.01$). This finding suggests that investors react less positively (negatively) to each unit of good (bad) news issued by managers who have higher guidance errors. Column 4 shows that the coefficients on *ExecBias*×*GoodNews* and *ExecBias*×*BadNews* are positive and negative (δ=0.9249 and θ=-0.3660, $p<0.01$ and $p<0.01$), respectively. Since *Bias* is defined as actual earnings minus management guidance, this finding suggests that investors adjust for manager-specific biases by responding more positively (less negatively) to good (bad) news issued by managers who are more pessimistic in their guidance issuances.

The signs of the coefficients on *ExecError* and *ExecBias* (α=-0.01 and 0.01, $p<0.01$ and $p<0.01$) are also consistent with investors giving a premium to managers who are more accurate and pessimistic, i.e. managers who tend to surprise the market less with bad news when actual earnings are announced. On balance, these results suggest that investors take into account manager-specific guidance behavior in their reactions to management forecasts.

Table 2.4. Does the Market Recognize the Manager Fixed Effects on Guidance?

	Predicted Sign	Dependent Variable: MktReaction	
ExecError	-	-0.0100***	
		(0.0028)	
ExecError × GoodNews	-	-0.3883**	
		(0.1705)	
ExecError × BadNews	-	-0.2841***	
		(0.0898)	
ExecBias	+		0.0100**
			(0.0043)
ExecBias × GoodNews	+		0.9249***
			(0.2743)
ExecBias × BadNews	-		-0.3660***
			(0.0771)
GoodNews	+	5.4772***	5.3118***
		(1.6131)	(1.1269)
BadNews	+	4.9237***	3.4903***
		(0.8728)	(0.4165)
Firm Fixed Effects		Y	Y
Year Fixed Effects		Y	Y
Control Variables		Y	Y
Adjusted R-sq		58.73%	58.93%
Observations	1,182		

This table presents results from testing the association of market reaction to management guidance with manager fixed effects estimated in Table 2.3 Panel A. The sample includes 1,182 quarterly management guidance issuances. *MktReaction* is the sum of market-adjusted returns for the three-day window around the guidance issuance date. *GoodNews (BadNews)* is equal to guidance news if *News* is positive (negative). The vector of control variables includes *Size*, *Loss*, *ROA*, *EarnVol*, *Num*, and *M/B*. Coefficient standard errors are in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 2.5. Do Analysts Recognize the Manager Fixed Effects on Guidance?

	Predicted Sign	Dependent Variable: ChgConsensus	
ExecError	-	-0.0008***	
		(0.0002)	
ExecError×GoodNews	-	-0.0042	
		(0.0128)	
ExecError×BadNews	-	-0.0262***	
		(0.0067)	
ExecBias	+		0.0010***
			(0.0003)
ExecBias×GoodNews	+		0.0919
			(0.0766)
ExecBias×BadNews	-		-0.0699***
			(0.0052)
GoodNews	+	0.0851	0.0153
		(0.1211)	(0.0186)
BadNews	+	0.5777***	0.5569***
		(0.0655)	(0.0283)
Firm Fixed Effects		Y	Y
Year Fixed Effects		Y	Y
Control Variables		Y	Y
Adjusted R-sq		73.59%	76.97%
Observations	1,182		

This table presents the results from testing the association of change in analysts' consensus forecasts to management guidance with manager fixed effects estimated in Table 2.3 Panel A. The sample includes 1,182 quarterly management guidance issuances. *ChgConsensus* is the difference between analysts' consensus forecasts before and after management issues guidance. *GoodNews (BadNews)* is equal to guidance news if *News* is positive (negative). Coefficient standard errors are in parentheses. The vector of control variables includes *Size*, *Loss*, *ROA*, *EarnVol*, *Num*, and *M/B*. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

5.3. Change in Analysts' Consensus Forecasts and Managers' Guidance Behavior

Table 2.5 reports the results for tests of changes in analysts' consensus forecasts to management guidance. As with investors, the coefficients on *ExecError*×*BadNews* and *ExecBias*×*BadNews* are both negative and significant (θ=-0.0262 and -0.0699, $p<0.01$ and $p<0.01$). This is consistent with H2 and suggests that analysts do take into account manager-specific guidance behavior by revising their

forecasts less for bad news if the manager is more inaccurate or more pessimistic. The coefficients on *ExecError*×*GoodNews* and *ExecBias*×*GoodNews* are both in the hypothesized direction but nonsignificant (δ=-0.0042 and 0.0919, p>0.10 and p>0.10). The coefficient on *BadNews* is positive and significant (α=0.5777 and 0.5569, p<0.01 and p<0.01), but the coefficient on *GoodNews* is positive and nonsignificant (α=0.0851 and 0.0153, p>0.10 and p>0.10) for both regressions. This finding may be due to either bad news being inherently more credible, such that analysts' responses to bad news are stronger, or the finding may reflect a lack of experience in novice analysts. Generally, the results in Table 2.5 provide some support for H2, since I find that analysts only adjust for differences in managers' guidance accuracy and bias when firms issue bad news but not good news.[8]

5.4. Analyst Forecasting Experience and Managers' Guidance Behavior

In this section, I examine whether analyst forecasting experience plays a role in determining analysts' responses to manager-specific guidance behavior. Mikhail et al. (1997) find that analysts' accuracy improves with their forecasting experience. Using a sample from the Zacks database of quarterly forecasts made by 236 analysts during 1980-1995, Mikhail et al. show that the error in analyst forecasts declines as the number of forecasts an analyst has issued for a firm increases. To the extent that analyst forecasting experience is a significant determinant of forecast performance, it is also likely to be associated with analysts' ability to recognize differences in managers' guidance behavior.

[8] In untabulated analyses, I also examine whether the initiation of analyst coverage is associated with manager turnovers. However, I find little evidence of such an association. This lack of evidence is not surprising given that analysts often follow a portfolio of firms in the same industry so the analyst is likely to be already following the hiring firm if a manager moves between firms within the same industry. On the other hand, an analyst is unlikely to initiate coverage of the hiring firm if a manager moves across industries.

Table 2.6. Does Analyst Experience Matter?

		Dependent Variable: ChgForecast			
	Predicted Sign	Column 1: Low Experience	Column 2: High Experience	Column 3: Low Experience	Column 4: High Experience
ExecError	-	0.0057	-0.0050*		
		(0.0049)	(0.0033)		
ExecError × GoodNews	-	0.3724**	-0.5691***		
		(0.1728)	(0.2192)		
ExecError × BadNews	-	4.0881***	-0.9515**		
		(0.4344)	(0.4497)		
ExecBias	+			-0.0214	-0.0092
				(0.0086)	(0.0075)
ExecBias × GoodNews	+			-0.6245**	0.8630***
				(0.2997)	(0.3148)
ExecBias × BadNews	-			-6.5322***	-3.3998**
				(0.7161)	(1.6197)
GoodNews	+	-4.6777***	7.3226***	-3.8947***	5.3317***
		(1.7175)	(2.5959)	(1.4226)	(1.8130)
BadNews	+	-12.2107***	19.8953***	3.4510	9.3999***
		(3.6883)	(2.9968)	(2.4088)	(2.4819)
Firm Fixed Effects		Y	Y	Y	Y
Year Fixed Effects		Y	Y	Y	Y
Brokerage Fixed Effects		Y	Y	Y	Y
Control Variables		Y	Y	Y	Y
Adjusted R-sq		52.36%	62.14%	52.54%	62.18%
Observations		3,283	2,544	3,283	2,544

This table presents results from testing the association of individual analysts' revisions to management guidance with manager fixed effects estimated in Table 2.3 Panel A. The sample includes 5,827 individual analyst forecast revisions. *Experience* is the number of prior firm quarters an analyst has appeared in the IBES Detail file. *ChgForecast* is the change in analysts' individual forecasts before and after management issues guidance. *GoodNews (BadNews)* is equal to guidance news if *News* is positive (negative). Coefficient standard errors are in parentheses. The vector of control variables includes *Size*, *Loss*, *ROA*, *EarnVol*, *Num*, and *M/B*. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Therefore, to test whether analysts' responses to management guidance vary with analyst forecasting experience, I match individual analyst forecasts from the IBES Detail file with my sample, resulting in 5,827 analyst forecast revisions around the issuance of management guidance. The mean level of forecasting experience (*Experience*) for the analysts in this sample is 17 quarters. I define *Experience* as the number of prior firm quarters the analyst has appeared in the IBES Detail file. I then split forecasts at the mean of *Experience* into high experience and low experience groups and run the following regressions within each of these groups.

$$ChgForecast = \sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \omega_j Broker age_j + \sum \gamma_m ExecError_m + \sum \delta_m ExecError_m \times GoodNews_{it} + \sum \theta_m ExecError_m \times BadNews_{it} + \varepsilon_{it} \quad (7)$$

$$ChgForecast = \sum \alpha_k X_{kit} + \sum \beta_t Year_t + \sum \lambda_i Firm_i + \sum \omega_j Broker age_j + \sum \gamma_m ExecBias_m + \sum \delta_m ExecBias_m \times GoodNews_{it} + \sum \theta_m ExecBias_m \times BadNews_{it} + \varepsilon_{it} \quad (8)$$

Equations (7) and (8) are similar to the earlier tests that I use to examine changes in analysts' consensus forecasts in response to management guidance. *ChgForecast*, is the change in analysts' forecasts after management guidance issuance. I also control for brokerage fixed effects because prior research finds systematic differences in analyst forecast accuracy between large and small employers (Clement 1999). If, in their responses to management guidance, analyst forecasting experience is not associated with their ability to take into account managers' guidance behavior, then I should not expect a difference between the two groups. Table 2.6 provides the results of estimating equations (7) and (8). The results in Table 2.6 suggest that this is likely to be driven by the lack of forecasting experience for a subset of analysts. Column 2 reports that the coefficients *on ExecError*×*GoodNews* and *ExecError*×*BadNews* are negative (δ=-0.5691 and θ=-0.9515, $p<0.01$ and $p<0.05$) and consistent with experienced analysts placing less weight on guidance by managers

who have higher forecast errors. The coefficients on *ExecBias* ×*GoodNews* and *ExecBias* ×*BadNews* in column 4 (δ=0.8630 and θ=-3.3998, $p<0.01$ and $p<0.05$) are consistent with experienced analysts considering managers' guidance bias by responding more positively to good news and less negatively to bad news when manager guidance pessimism increases. The coefficients on the news variables are also positive and significant for the high experience analysts group.

To determine if firm-specific experience is incremental to general forecasting experience, I create another variable that measures the number of years an analyst has followed the same firm. The mean number of firm-specific forecasting experience is six quarters and the mean in the top quartile is nine. For the subsample of analysts in the top quartile, I find evidence consistent with analysts adjusting for managers' guidance behavior. This result suggests that firm-specific forecasting experience plays a role in analysts' ability to recognize manager-specific guidance behavior incremental to general experience.

These results indicate that analysts also consider differences in managers' guidance accuracy and bias in their forecast revisions when analysts themselves have sufficient forecasting experience.

6. Additional Analyses

6.1. Alternative Proxy for Managers' Guidance Behavior

To examine the robustness of the manager fixed effects approach I construct an alternative proxy for managers' guidance behavior. Brochet et al. (2009) report that breaks in firm's guidance patterns are more likely to occur following executive turnover and that guidance precision is reduced when firms do provide guidance. Therefore, I identify the first guidance issued by a newly appointed manager. I define the observation as *Skilled* equal to one if the earnings estimate is at least as accurate as

the firm's last guidance that was issued before the manager's appointment. I re-estimate equations (3) and (5) by replacing the manager fixed effect coefficients with the new indicator variable *Skilled*. Consistent with the results reported in section V, when *MktReaction* is the dependent variable the coefficient on *Skilled* is positive and significant at the 0.05 level. However, I do not find a relation between *ChgConsensus* and *Skilled*. This lacuna could be due to the significant number of missing observations for analysts' consensus forecasts, which leads to a significant reduction in sample size.

6.2. Annual Guidance

To examine whether the results can be generalized to annual guidance, I also perform the tests by using annual guidance listed on the CIG file. Consistent with my hypotheses, I find that for a sample of firms' annual guidance, investors and analysts also adjust for differences in managers' guidance behavior in their responses.

7. Conclusion

My goal in this paper is to document whether investors and analysts recognize and adjust for differences in managers' guidance behavior. My results indicate that differences in managers' guidance behavior are incorporated by investors and analysts in their responses to guidance. I find that investors assess more credibility to accurate managers by reacting more positively (negatively) to their good (bad) news guidance. Investors also adjust for the bias in guidance by reacting more positively to good news guidance and less negatively to bad news guidance issued by managers with greater pessimism. My results also suggest that analyst experience plays an important role in their responses to management guidance. I find that when analysts have sufficient

forecasting experience, they also adjust for managers' guidance accuracy and bias in their forecast revisions to both good news and bad news guidance.

Although the literature on earnings guidance provides several alternative explanations for why firms issue guidance and what firm characteristics are associated with guidance properties, we know very little about the effect of managers on firms' guidance decisions. The findings in this paper shed light on this issue. In my empirical design, I assume that managers' guidance behavior is fixed, but it is possible that managers acquire these skills over time. Therefore, future research might examine whether managers exhibit a learning pattern in their guidance issuances, similar to that of analysts.

The reputational effect of guidance is only one of the many consequences to managers for having his/her own voluntary disclosure style. Future studies might examine whether managers' guidance accuracy and bias are associated with their compensation levels and career trajectory.

Finally, given that investors underreact to management guidance news and that the underreaction is reduced for firms with higher credibility (Ng, Tuna, and Verdi 2007), future studies might examine whether investor underreaction is also reduced for managers with a reputable guidance track record.

REFERENCES

Ajinkya, B., S. Bhojraj, and P. Sengupta. 2005. The association between outside directors, institutional investors, and the properties of management earnings forecasts. *Journal of Accounting Research* 43: 343-376.

Bamber, L., J. Jiang, and I. Wang. 2008. What's my style? The influence of top managers and their personal backgrounds on voluntary corporate financial disclosure. Working paper, University of Georgia.

Bennedsen, M., F. Perez-Gonzalez, and D. Wolfenzon. 2007. Do CEOs matter? Working paper, University of Texas, Austin.

Bertrand, M. and A. Schoar. 2003. Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics* 68: 1169-1208.

Bhojraj, S., R. Libby, and H. Yang. 2009. Analyzing guidance at the firm level: The association between guidance frequency, guidance properties, and market reactions. Working paper, Cornell University.

Brochet, F., L. Faurel, and S. McVay. 2009. Earnings guidance following top executive turnovers. Working paper, Harvard University.

Clement, M. 1999. Analyst forecast accuracy: Do ability, resources, and portfolio complexity matter? *Journal of Accounting and Economics* 27: 285-303.

Cotter, J., I. Tuna, and P. Wysocki. 2006. Expectations management and beatable targets: How do analysts react to explicit earnings guidance? *Contemporary Accounting Research* 23: 593-624.

Dechow, P. 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics*. 17: 3-42.

Dyreng, S., M. Hanlon, and E. Maydew. 2009. The effect of executives on corporate tax avoidance. Working paper, University of North Carolina.

Fischer, P. and R. Verrecchia.2000. Reporting bias. *The Accounting Review* 75: 229-245.

Ge, W., D. Matsumoto, and J. Zhang. 2009. Do CFOs have styles of their own? An empirical investigation of the effect of individual CFOs on financial reporting practices. Working paper, University of Washington.

Graham, J., C. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40: 3-73.

Hutton, A. and P. Stocken. 2009. Prior forecasting accuracy and investor reaction to management earnings forecasts. Working paper, Boston College.

Jennings, R. 1987. Unsystematic security price movements, management earnings forecasts, and revisions in consensus analyst earnings forecasts. *Journal of Accounting Research* 25: 90-110.

Kasznik, R. and B. Lev. 1995. To warn or not to warn: Management disclosures in the face of an earnings surprise. *The Accounting Review* 70: 113-134.

Lang, M. and R. Lundholm. 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review* 71: 467-492.

Libby, R. and H. Tan. 1999. Analysts' reactions to warnings of negative earnings surprises. *Journal of Accounting Research* 37: 415-435.

Liu, C. and D. Yermack. 2007. Where are the shareholders' mansions? CEOs' home purchases, stock sales, and subsequent company performance. Working paper, Arizona State University.

Malmendier, U. and G. Tate. 2008. Who make acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics* 89: 20-43.

Malmendier, U. and G. Tate. 2009. Superstar CEOs. *Quarterly Journal of Economics*, Forthcoming.

Matsumoto, D. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review* 77: 483-514.

Mikhail, M., Walther, B., and R. Willis. 1997. Do security analysts improve their performance with experience? *Journal of Accounting Research* 35: 131-157.

Miller, G. 2002. Earnings performance and discretionary disclosure. *Journal of Accounting Research* 40: 173-204.

Ng, J., I. Tuna, and R. Verdi. 2007. Management forecast credibility and underreaction to news. Working paper, Massachusetts Institute of Technology.

Petersen, M. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22: 435-480.

Rogers, J. and P. Stocken. 2005. Credibility of management forecasts. *The Accounting Review* 80: 1233-1260.

Schrand, C. and S. Zechman. 2009. Executive Overconfidence and the Slippery Slope to Fraud. Working paper, University of Pennsylvania.

Skinner, D. 1994. Why firms voluntarily disclose bad news. *Journal of Accounting Research* 32: 38-60.

Soffer, L., S. Thiagarajan, and B. Walther. 2000. Earnings preannouncement strategies. *Review of Accounting Studies* 5: 5-26.

Subramanyam, K. 1996. The pricing of discretionary accruals. *Journal of Accounting and Economics* 22: 249-281.

Tan, H., R. Libby, and J. Hunton. 2002. Analysts' reactions to earnings preannouncement strategies. *Journal of Accounting Research* 40: 223-246.

Verrecchia, R. 1990. Information quality and discretionary disclosure. *Journal of Accounting and Economics* 12: 365-380.

Vuong, Q. 1989. Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica* 5: 303-333.

Williams, P. 1996. The relation between a prior earnings forecast by management and analyst response to a current management forecast. *The Accounting Review* 71: 103-113.