Does Quarterly Earnings Guidance Increase or Reduce Earnings Management?

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Abstract

This study adds to the earnings guidance debate by investigating whether quarterly guidance is related to two forms of earnings management: (1) benchmark beating and (2) accounting irregularities. Using a post-Regulation Fair Disclosure sample, I find that firms regularly issuing earnings guidance display a discontinuity in their distribution of management forecast errors and a larger discontinuity in their distribution of analyst forecast errors compared to non-guiding firms. Multivariate tests reveal that guiding firms recognize large abnormal accruals to beat their own guidance, but not to beat analyst forecasts, whereas non-guiding firms do recognize large abnormal accruals to beat analyst forecasts. Overall, guiding firms and non-guiding firms use similar levels of abnormal accruals to beat benchmarks. I also find no statistical relation between quarterly guidance and the likelihood of accounting irregularities. In sum, the evidence shows that while guiding firms and non-guiding firms manage earnings to different benchmarks, they are similar in terms of their aggregate earnings management.

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1. Introduction

> "It's hard to see how the issuance of earnings guidance ***doesn't*** create a climate of 'real men make their earnings forecasts - by any means possible' - including the stretching of judgment to ridiculous lengths in preparing accounting estimates." (J. Ciesielski, *The AAO Weblog*, July 27, 2006).

A number of firms have discontinued providing quarterly earnings guidance in recent years perhaps in part due to calls by numerous professional organizations to end this practice (Chen, Matsumoto, and Rajgopal 2010). These organizations argue that earnings guidance, especially when issued on a quarterly basis, focuses investors and managers on short-term earnings performance and leads to earnings management.[1] Anecdotal evidence seems to support this argument. The Securities and Exchange Commission (SEC) has alleged that firms such as Cardinal Health, Nortel Networks, and VeriFone committed fraud to meet their own guidance (Bansal and Dabrowski 2007; SEC 2009a; SEC 2009b). It is unclear, however, whether curtailing quarterly guidance will reduce earnings management. Security analysts provide earnings forecasts for many firms regardless of whether managers issue guidance. Managers have strong incentives to meet analyst forecasts including the potential for increased compensation (Matsunaga and Park 2001) and higher stock prices (Bartov, Givoly, and Hayn 2002; Kasznik and McNichols 2002; Graham, Harvey, and Rajgopal 2005), and prior studies show that firms sometimes manage earnings to achieve analyst earnings targets (e.g., Degeorge, Patel, and Zeckhauser 1999; Matsumoto 2002). Moreover, guidance may reduce earnings management because firms can use it as a tool to lower analyst expectations and make these targets easier to achieve (Matsumoto 2002; Graham, Harvey, and Rajgopal 2005; Baik and Jiang 2006; Cotter, Tuna, and Wysocki 2006).

[1] One example of this view is *Operating and Investing for the Long-Term*, a best practices document co-sponsored in 2008 by the CFA Institute, The Aspen Institute, the Committee for Economic Development, the Business Roundtable Institute for Corporate Ethics, and the Center for Capital Markets Effectiveness. The groups provide several recommendations to reduce managerial myopia including stopping quarterly guidance, which they believe can induce managers to take inappropriate actions to meet targets. This document is available at: http://www.aspeninstitute.org/policy-work/business-society/publications-speeches .

In this study, I investigate whether issuing quarterly earnings guidance increases or reduces firms' earnings management activities. Two forms of earnings management are considered. First, I examine the benchmark-beating behavior of *regularly* guiding versus non-guiding firms using a sample of firms covered by at least three analysts between 2002 and 2008. Distributions of management forecast errors and analyst forecast errors provide evidence of firms' efforts to meet or beat these benchmarks. Abnormal accruals are then examined to determine if evidence of benchmark beating in these distributions is associated with accrual manipulation. Second, I investigate whether quarterly earnings guidance is associated with a higher or lower likelihood of accounting irregularities. Accounting irregularities represent more egregious earnings management that results in financial restatements that are investigated for fraud.

I find firms regularly issuing earnings guidance display a discontinuity in their distribution of management forecast errors calculated from the lower bound of their guidance (i.e., they have fewer than expected observations one cent per share below the lower bound of their guidance) and have a more pronounced discontinuity in their analyst forecast error distribution than do non-guiding firms. Multivariate tests show that guiding firms manage earnings to beat their own forecasts, but not analyst forecasts. Specifically, guiding firms have large abnormal accruals when they narrowly beat their own guidance in consecutive quarters, but not when narrowly beating analyst forecasts in consecutive quarters. Non-guiding firms, however, do have large abnormal accruals when beating analyst forecasts in consecutive quarters and use a similar level of abnormal accruals to beat this benchmark as guiding firms use to achieve management forecasts. Further, the test of accounting irregularities finds no statistical relation between earnings guidance and the likelihood of these more egregious cases of earnings management. Together, the results in my study show that while guiding firms and non-guiding firms manage earnings to beat different benchmarks, their aggregate earnings management is similar.

My study is related to Kasznik (1999), who shows firms missing their own annual forecasts manage earnings upward to reduce the shortfall. Important differences, however, distinguish my study

from Kasznik (1999) and different inferences are drawn. First, while Kasznik (1999) shows firms manage earnings toward their own forecasts, little attention is given to whether these firms manage earnings more or less than firms that do not provide earnings guidance. Second, my study investigates quarterly rather than annual earnings guidance, and thus is more relevant to the current debate on whether companies should issue short-term earnings guidance. This distinction is important because of the difference in timing of the guidance investigated. Guidance in my sample averages approximately 51 days before quarter-end, compared to approximately 254 days before year-end in the Kasznik (1999) sample. Guidance that is more recent may serve as a more salient benchmark and may improve managers' ability to forecast earnings accurately. Third, I separately analyze firms that regularly issue guidance and firms that sporadically issue guidance whereas Kasznik (1999) treats all earnings guidance observations the same. This distinction in guidance behavior is important because these groups likely have different forecasting abilities and motivations for issuing guidance, resulting in different earnings management behavior (Bhojraj, Libby, and Yang 2010). Fourth, Kasznik's (1999) sample period ends in 1991. Major regulatory changes since 1991 (the Private Securities Litigation Reform Act of 1995, Regulation Fair Disclosure, and the Sarbanes-Oxley Act of 2002) have reduced the legal risk of issuing guidance, have limited firms' ability to influence analyst expectations without guidance, and have increased the cost of using abnormal accruals to achieve earnings goals. These regulations likely alter the relation between guidance and earnings management documented by Kasznik (1999).

This study contributes to academic literatures and helps to inform the current debate over whether companies should provide quarterly earnings guidance. The study contributes to the earnings management literature by providing evidence that firms regularly issuing quarterly earnings guidance manage earnings to beat this target, but do not manage earnings to beat analyst forecasts as non-guiding firms do. It also adds to the earnings guidance literature by providing evidence that regularly guiding and non-guiding firms are similar in their overall use of abnormal accruals to beat benchmarks. This finding

should be of interest to managers considering changes to their earnings guidance policies as well as to auditors and to regulators contemplating restrictions on guidance.

2. Background and Hypothesis Development

2.1. Background on Quarterly Guidance

Anecdotal evidence favors the view that quarterly earnings guidance increases earnings management. The Committee for Economic Development (CED 2007, p. 5), for example, states, "Companies that drop quarterly guidance have one fewer reason to manage earnings to hit an earnings-per-share target and, thus, may be less likely to sacrifice long-term benefits for the appearance of current gains." Regulators and investors also voice concern about the association between guidance and earnings management. Former SEC Chairman Christopher Cox remarked guidance contributes to firms ". . . manipulating, managing, [and] smoothing earnings" (Taub 2006). Similarly, investor Warren Buffett noted that firms have "played a wide variety of accounting games" to meet earnings targets set by management (Buffett 2000, p. 18). Perhaps the most telling example of the belief that guidance increases earnings management comes directly from corporate managers. For example, Tom King, Vice President of Investor Relations at Progressive Insurance, stated his company avoids providing earnings guidance "to put us in a position to report nothing but the most accurate result that we can" (Association for Investment and Management Research 2003).

Without guidance, however, managers have limited influence over expectations of analysts and investors. Survey evidence reports that managing these expectations is a commonly cited reason for firms issuing guidance (Graham, Harvey, Rajgopal 2005; Kueppers, Sandford, and Thompson 2009) and other studies have shown managers can influence analyst expectations through guidance (Baik and Jiang 2006; Cotter, Tuna, and Wysocki 2006). If managers feel compelled to meet analyst and market expectations even when these expectations are unrealistic, an absence of guidance may actually lead to *more* earnings management. Chuck Hill, former Director of Research at Thomson Financial/First Call, has expressed a

similar view stating, "…whether [managers have] given the guidance or not, there are analysts' expectations out there that they are going to try and meet" (Association for Investment Management and Research 2003).

The question of whether quarterly guidance increases or decreases earnings management is part of a larger debate on whether firms should issue quarterly guidance.[2] A number of groups including the U.S. Chamber of Commerce, The Aspen Institute, the CFA Institute, the Committee for Economic Development, and the Center for Audit Quality have called on companies to stop providing quarterly earnings guidance and to provide more information relevant to long-term value. Providing quarterly guidance, it is argued, contributes to analyst and investor myopia by focusing them on short-term earnings (e.g., CED 2007). Managers then respond to the market's short-term focus by taking actions to achieve earnings targets that may destroy long-term firm value. Consistent with these concerns, Cheng, Subramanyam, and Zhang (2007) find that firms issuing frequent quarterly guidance have lower investment in R&D and are more likely to cut R&D to achieve analyst forecasts. These frequent guidance firms also have lower future earnings growth relative to firms that infrequently or never provide quarterly guidance.

Proponents claim, however, that guidance is an important source of market information. This view is well supported by academic literature. First, earnings guidance explains a large portion of the variation in stock returns (Ball and Shivakumar 2008; Beyer, Cohen, Lys, and Walther 2009). More than 15 percent of the variation in quarterly stock returns occurs around guidance announcements, compared to less than three percent for earnings announcements and about six percent for analyst forecasts (Beyer, Cohen, Lys and Walther 2009). Second, earnings guidance can lower information asymmetry (Ajinkya and Gift 1984; Coller and Yohn 1997), which leads to lower information gathering costs (Diamond 1985) and lower cost of capital (Lambert, Leuz, and Verrecchia 2007).

[2] See Miller (2009) for a review of literature related to the earnings guidance debate.

In sum, there are compelling reasons to expect both a positive and a negative relation between earnings guidance and earnings management. Some evidence suggests guidance creates incentives for firms to manage earnings toward short-term targets, while other evidence suggests guidance reduces earnings management by informing analysts' and investors' earnings expectations. The current study investigates this issue with the aim of informing the more general debate on the advantages and disadvantages of quarterly earnings guidance.

2.2. Prior Literature

A few prior studies investigate the relation between guidance and earnings management. Managers have strong incentives to avoid missing their own guidance including increased potential for litigation (Kasznik 1999), negative effects on management reputation and careers (Trueman 1986; Kasznik 1999) and negative stock price reaction (Chen 2004). Kasznik (1999) uses a sample of firms providing annual guidance between 1987 and 1991 to show that firms missing their guidance numbers have larger abnormal accruals compared to firms meeting their guidance. This evidence implies firms manipulate earnings upward to minimize the gap when their earnings fall short of guidance. Hribar and Yang (2010), however, show that firms meeting or beating their annual guidance have larger abnormal accruals compared to firms missing their guidance, consistent with firms using accruals to achieve their own forecasts. Other work (Hu and Jiang 2008) provides evidence that more frequent quarterly guidance is associated with a greater absolute value of abnormal accruals for a sample of firms that chose to stop providing earnings guidance.

While these studies provide evidence of earnings management by firms that issue guidance, they do not directly compare earnings management by firms that issue guidance to firms not issuing guidance. In other words, these studies do not consider the earnings management that occurs in the absence of guidance. Managers of non-guiding firms face similar pressures to meet analyst forecasts, such as career concerns (e.g., Farrell and Whidbee 2003; Mergenthaler, Rajgopal, and Srinivasan 2009) and market reactions (e.g., Bartov, Givoly, and Hayn 2002; Skinner and Sloan 2002). Degeorge, Patel, and

Zeckhauser (1999) use the distribution of consensus analyst forecast errors to provide evidence that firms manage earnings to meet analyst forecasts. Their results show a large number of firms reporting earnings that just exceed consensus forecasts relative to the number of firms reporting earnings just below these forecasts. Other studies show firms just beating analyst forecasts have large abnormal accruals, indicating that this pattern is at least partially due to accrual manipulation (e.g., Ayers, Jiang, and Yeung 2006).

Evidence on how firms use guidance and earnings management together to achieve analyst forecasts is limited. Matsumoto (2002) shows firms meeting analyst consensus forecasts have larger abnormal accruals and have a higher likelihood of unexpected downward analyst forecast revisions. These downward revisions may or may not be caused by management guidance. Other evidence is consistent with a tradeoff between guidance and earnings management. Prior studies suggest that managers are more likely to use downward expectations management to achieve quarterly analyst forecasts when accruals are constrained by auditing (Brown and Pinello 2007), firm governance (Liu, Tiras, and Zhuang 2008), or monitoring by analysts and institutional investors (Liu 2008). These studies similarly focus on analyst forecast revisions, which may (or may not) be caused by disclosures other than earnings guidance.[3] Further, these papers ignore a large portion of guidance provided concurrently with earnings announcements because they only consider forecasts made after the prior quarter's earnings announcement.[4]

[3] Liu, Tiras, and Zhuang (2008) use actual cases of earnings guidance in one specification of their model. Their approach, however, relies on First Call's coding of downward guidance, which limits the sample to more extreme cases of downward guidance (Rees and Wynalda 2008). Further, the authors also limit their downward guidance sample to observations where the analyst forecast revision is larger than expected based on a Matsumoto (2002) model of analyst forecast revisions.

[4] Other studies provide evidence on the relation between guidance and financial reporting using audit fees. Krishnan, Pevzner, and Sengupta (2009) find that firms with a history of issuing earnings guidance pay higher audit fees than firms not issuing guidance, consistent auditors charging a premium or performing additional assurance work to compensate for the risks associated with guidance. It does not necessarily follow, however, that guidance firms manage earnings more. The higher fees may simply compensate auditors for the additional work of reviewing guidance disclosures and other voluntary disclosures issued by guiding firms, which is required under Statement of Auditing Standards (SAS) No. 8 (Krishnan, Pevzner, and Sengupta 2009). Ball, Jayaraman, and Shivakumar (2009) provide another view. They similarly find audit fees to be positively associated with current year guidance frequency, but they interpret this result as evidence these firms commit to higher levels of audit verification in order to make their earnings guidance more credible.

Schwartz (2001) examines firms' earnings management and publicly issued guidance prior to Regulation FD. Similar to Matsumoto (2002), he finds evidence that firms both manage earnings upwards and guide forecasts downwards to achieve analyst expectations. He also investigates the relation between guidance and earnings management using an accrual model based on the time-series properties of earnings. Schwartz (2001) finds firms issuing upward guidance have more positive unexpected accruals and firms issuing downward guidance have more negative unexpected accruals relative to other guiding firms and firms not issuing guidance. These results, however, are not robust to more common abnormal accrual measures based on cross-sectional or time-series Jones models. Further, because there is no evidence linking the relation between guidance direction and unexpected accruals to benchmark beating behavior, it is difficult to determine whether the effects are due to guidance changing opportunistic earnings management behavior or because managerial optimism (or lack thereof) affects both guidance and accrual decisions (Gong, Li, and Xie 2009).

2.3. Hypotheses

I investigate the relation between quarterly earnings guidance and earnings management by testing two hypotheses. The first hypothesis tests the relation between quarterly earnings guidance and use of abnormal accruals to beat benchmarks. If managers can adequately predict quarterly earnings and use guidance to reduce information asymmetry, I expect earnings guidance to reduce abnormal accruals recognized by firms to beat benchmarks. This idea is consistent with the theoretical model of Dutta and Gigler (2002) and with prior empirical work that shows voluntary disclosure reduces information asymmetry and limits earnings management. For example, Jo and Kim (2007) find firms issuing more press releases recognize smaller abnormal accruals in the quarters surrounding second equity offerings. Further, providing a signal of true earnings reduces incentives to manage earnings. Lower information asymmetry leads to more accurate share prices, which helps mitigate large negative price reactions to missed analyst forecasts (Skinner and Sloan 2002). Lower abnormal accruals for guidance firms beating

benchmarks would also suggest managers use guidance and accounting manipulation as substitutes for meeting expectations, which is consistent with Brown and Pinello (2007) and other studies that find evidence consistent with downward guidance when accruals are constrained.

However, if managers cannot adequately predict quarterly earnings or they use earnings guidance to mislead investors, I expect a positive relation between guidance and abnormal accruals to beat benchmarks. This expectation is consistent with results in Kasznik (1999) and Hribar and Yang (2010) that suggest managers use abnormal accruals to reduce errors in overestimated guidance. A positive relation between quarterly guidance and earnings management could also occur because issuing frequent guidance focuses investors on short-term earnings performance, which may put more pressure on managers to achieve short-term earnings targets (Cheng, Subramanyam, and Zhang 2007). The first hypothesis is

> H1: Firms that regularly issue quarterly earnings guidance use larger (smaller) positive annual abnormal accruals to meet or beat earnings benchmarks compared to firms not issuing quarterly guidance.

While the first hypothesis provides evidence on guiding firms and non-guiding firms managing earnings to beat benchmarks, this may not be regulators' primary concern. Regulators considering whether to ban (or require) quarterly earnings guidance may be more interested in the effects of guidance on more egregious forms of earnings management that result in large market value declines.[5] Thus, I also test whether earnings guidance affects the likelihood of accounting irregularities. Accounting irregularities are financial restatements that are likely caused by intentional actions to achieve reporting goals as opposed to restatements caused by errors, which could be misinterpretations of generally accepted accounting principles (GAAP) or clerical mistakes (Hennes, Leone, and Miller 2008). Using accounting irregularities as a criterion focuses tests on egregious earnings management whereas abnormal accrual tests also include less egregious earnings management such as minor opportunistic judgments in accrual estimates. The second hypothesis is

[5] Miller (2009) points out that the earnings guidance debate has changed from the 1970s when the SEC was considering making guidance mandatory to the current debate over whether companies should cease providing management guidance.

H2: More frequent quarterly earnings guidance increases (decreases) the likelihood that a firm will have an accounting irregularity.

3. Data

3.1 Earnings Guidance Data

I begin my investigation by selecting firms with quarterly analyst forecasts in the I/B/E/S Unadjusted History Datasets and matching these observations to quarterly guidance data from the I/B/E/S Guidance File.[6] I limit the sample period to 2001 through 2008 to eliminate effects from privately issued guidance before Regulation Fair Disclosure (Regulation FD) and because I/B/E/S guidance coverage appears to be more complete during this period than in earlier years. I also limit the sample to firms covered by at least three analysts to increase the likelihood of coverage in the Guidance File.[7] Further, I require the observations to have data on COMPUSTAT and exclude standard industry codes associated with utilities (SIC 49) and financial firms (SIC 60-69) because earnings management incentives at these firms may differ due to regulation.

I define quarterly earnings guidance as earnings forecasts provided by management after the end of the prior fiscal quarter and before the end of the current fiscal quarter. This definition distinguishes guidance from earnings warnings, which occur after the current fiscal quarter has ended and when management already knows the quarter's earnings.[8] It also excludes guidance that is less credible due to a long forecast horizon or that may be considered stale after managers learn the prior quarter's earnings.

[6] The I/B/E/S Guidance File contains management issued forecasts of earnings and other items such as cash flows, revenues, and capital expenditures. The file attempts to capture guidance for all firms covered in the I/B/E/S database. Some content dates back to 1994, but the number of observations and perhaps the depth of coverage increases over time.

[7] I make this restriction because Chuk, Matsumoto, and Miller (2009) find that Thomson First Call's Company Issued Guidance Database is more complete for firms with a larger analyst following. The I/B/E/S Guidance file is likely to have similar completeness issues because the two databases have shared a collection process since 2002.

[8] Managers do not face the same risks issuing earnings warnings as they do when they issue earnings guidance. When earnings are unknown, managers can guide analysts to reduce analyst forecast error, but they publically commit to a target and may have to manage earnings to achieve that target if they are incorrect. If instead managers already know the true earnings level, they can provide that information to analysts without risk and reduce misreporting incentives.

Table 1 provides descriptive information on quarterly earnings guidance for the sample firms. Panel A shows approximately 25 percent of sample firms issue guidance in an average quarter during the sample period. The percentage of firms providing guidance increases from 2001 to 2004 and then steadily declines for the remainder of the sample period.[9] The latest guidance issued in a quarter typically averages between 50 and 60 days before the fiscal quarter end and is frequently for a specific point or range amount, as opposed to being open-ended or qualitative guidance.[10]

Panel B describes the pattern of quarterly guidance within fiscal years. While the majority of firm-years contain no quarterly guidance, there are a substantial number of firm-years with sporadic quarterly guidance. More notably, 14.2 percent of the firm-years have management guidance in each quarter. There also appears to be some stickiness in quarterly guidance behavior. Firms issuing guidance in the fourth fiscal quarter are likely to have issued guidance in earlier quarters of the fiscal year (86.3 percent of fourth quarter guidance observations) and in the fourth quarter of the prior fiscal year (63.8 percent of fourth quarter guidance observations). Similarly, firms are less likely to issue quarterly guidance in the early part of the fiscal year and not in the fourth fiscal quarter (15.6 percent of annual observations).

Further evidence on the timing of quarterly guidance is given in Figure 1, which displays the frequency of management guidance occurring in the biweekly periods leading up to earnings announcements. Management forecasts in the last four weeks before earnings announcements are flagged as earnings warnings rather than as guidance because they are typically issued after the fiscal-quarter end. The figure shows earnings guidance is issued throughout the quarter, but it is particularly common six biweekly periods (85 to 98 days) before the earnings announcement. This timing is consistent with earnings guidance being issued with the announcement of the prior quarter's earnings.

[9]Anilowski, Feng, and Skinner (2007) note for the First Call File changes in the number of firms issuing guidance may be due to changes in database coverage. The same caveat applies to changes in the number of firms issuing guidance on the I/B/E/S Guidance File.

[10] The I/B/E/S Guidance File attempts to convert guidance into a point or range format where possible. For example, if a firm states that earnings will be 10% higher than last year, this guidance will be recorded as a point forecast. Thus, point or range describes the substance rather than the form of the forecast.

Figure 2 Panel A depicts the pattern of price-scaled median analyst forecast errors over the biweekly periods prior to earnings announcements, a design similar to Figure 1 in Richardson, Teoh, and Wysocki (2004). Separate lines are provided for cases where the guidance is upward, downward, or neutral. This categorization is determined by comparing the last guidance a firm provides in a quarter to the median analyst forecast issued in the prior two weeks. The sample is limited to cases of point or range guidance. For cases where guidance is issued in a range format, the midpoint of the range is used. The pattern of analyst forecasts errors for firms not issuing guidance is displayed in Figure 2 Panel B.

Panel A shows a "walk-down" pattern for firms with downward guidance (approximately 60 percent of guidance observations) and a "walk-up" pattern for firms with upward guidance (approximately 30 percent of guidance observations). Both groups have substantial movements around the time of the prior quarter's earnings announcement consistent with guidance commonly being issued in this period. The walk-up pattern, however, is also apparent later in the quarter, perhaps because managers are more cautious about guiding forecasts upward until more uncertainty is resolved. There also appears to be a quarterly walk-down pattern in Panel B for firms not issuing guidance.[11] The walk-down pattern in unguided quarterly forecasts could result from firms releasing negative news other than earnings guidance to manage analyst expectations or the pattern may be due to characteristics of the analysts. Regardless of guidance behavior, the median analyst forecast error at the earnings announcement date is positive.

3.2 Accounting Irregularities Data

Firms with accounting irregularities are identified from the U.S. Government Accountability Office (GAO) sample of accounting restatements using the classification scheme in Hennes, Leone, and

[11] Hutton (2005) finds a similar walk-down pattern in annual analyst forecasts prior to Regulation FD for firms that did not review analysts' earnings models according to a National Investor Relations Institute survey. It is unclear, however, whether these firms provided analysts with private earnings forecasts or other private information to walk down forecasts.

Miller (2008).[12] A restatement is classified as an irregularity if the firm describes the restatement as a "fraud" or an "irregularity" or if there is an investigation by the SEC, the Department of Justice (DOJ), or an independent investigation. Restatements not deemed irregularities are classified as "errors" and are not utilized in this study because they are less likely to represent intentional misreporting by management and may add noise to the analysis (Hennes, Leone, and Miller 2008).

Most known accounting irregularities have occurred at small firms and began prior to Regulation FD, which makes the sample criteria used in the abnormal accruals test problematic. Thus, for the accounting irregularities tests, I allow firms covered by fewer than three analysts and extend the sample period back to 1997. The sample period is also limited to irregularities beginning before 2006 because it is based on restatements identified by the GAO. Data on the restatement periods is hand collected from SEC filings.

4. Results

4.1 Benchmark Beating

4.1.1 Method to Test Hypothesis 1

I investigate the relation between quarterly earnings guidance and benchmark-beating behavior by examining the distributions of analyst and management forecast errors and the abnormal accruals used by firms narrowly beating analyst and management forecasts. I focus on narrow benchmark beating, beating benchmarks by zero or one cent, because these cases are more likely to result from earnings management given the assumption that earnings management is costly (e.g., Schwartz 2001; Burgstahler and Eams 2006). I limit the main tests to a comparison of firms providing regular quarterly guidance with firms not providing guidance because professional groups calling on firms to end quarterly guidance often cite issues that are likely to be exacerbated by frequent guidance. These issues include the unproductive use of managements' time in developing forecasts, myopic behavior that stifles growth, and

[12] This data may be obtained from Andrew Leone's website: http://sbaleone.bus.miami.edu/.

creating a "culture" where investors and managers are focused on quarterly earnings reports (Krehmeyer, Orsagh, and Schacht 2006). I define regular guiders as firms providing guidance in at least six of the last eight quarters and non-guiders as firms providing no guidance in the last eight quarters. These definitions require two years of guidance data; thus, the sample period for the analysis begins with the fourth quarter of 2002. The benchmark beating behavior of sporadic guiders, firms issuing in guidance in one to five of the last eight quarters, is addressed in Section 4.1.5.

I begin by examining the distribution of unscaled analyst forecast errors using all sample firm-quarters. Analyst forecast errors are defined as reported earnings per share (EPS) less the last median I/B/E/S consensus forecast before earnings are announced. Figure 3 Panel A shows significantly fewer than expected observations one cent below analyst forecasts for regularly guiding firms (standardized difference = -10.68), which is consistent with these firms managing earnings to beat the analyst forecast benchmark.[13] A similar discontinuity is seen for non-guiding firms (standardized difference = -10.40). This finding is in contrast to results in Hutton (2005), which shows no evidence of a discontinuity for a group of firms that do not review analysts' earnings models in the pre-Regulation FD era. The evidence of a discontinuity for non-guiding firms supports the view that discontinuities are caused by earnings management as opposed to being caused by analysts reacting to management guidance.

While the discontinuity in analyst forecast errors is larger for firms issuing regular earnings guidance in my sample (standardized difference between discontinuities = 4.33), this does not necessarily indicate that these firms are using more accruals earnings management than non-guiding firms to achieve this benchmark. Regularly guiding firms may instead use real earnings management to achieve analyst forecasts. Further, earnings guidance could narrow the distribution of consensus analyst forecasts around the true earnings level, which would allow guiding firms to achieve consensus forecast with smaller abnormal accruals. In this situation, firms issuing guidance would beat the consensus forecast more often, but their accruals would be the same or smaller than non-guiding firms' accruals.

[13] Standardized difference statistics are calculated following the approach in Burgstahler and Dichev (1997).

Figure 3 Panel B shows the distribution of management forecast errors, measured from the lower bound of guidance, for firms that regularly issuing earnings guidance. Untablulated results show the management forecast errors are more biased (mean forecast error = 0.040 versus 0.020, p-value < 0.001) and less accurate (mean absolute forecast error = 0.059 versus 0.038, p-value < 0.001) than the guided analyst forecast errors, indicating that analysts make adjustments to improve forecast accuracy rather than simply echo the lower bound of management guidance.[14] The distribution also shows significantly fewer than expected observations one cent below the lower bound of guidance, consistent with firms managing earnings to avoid missing their own earnings forecasts (standardized difference = -8.67). Multivariate testing will explore how earnings management to achieve management guidance compares to earnings management to achieve analyst forecasts.

I next investigate the relation between beating earnings benchmarks and firms' accrual choices. While the benchmark-beating behavior being investigated occurs on a quarterly basis, I test its relation with abnormal accruals using a firm-year regression. The firm-year regression allows abnormal accruals to be estimated using an annual version of the Jones model, which has more support in the accounting literature than quarterly Jones models. A number of prior studies have evaluated annual Jones models and have shown their abnormal accrual estimates are correlated with SEC enforcement releases (e.g., Dechow, Sloan, and Sweeney 1995) and are well specified in tests identifying earnings management to meet or beat analyst forecasts (Ayers, Jiang, and Yeung 2006). A recent paper by Collins, Pungaliya, and Vijh (2010), in contrast, shows the quarterly Jones model's use of quarter-to-quarter change in revenue to estimate non-discretionary accruals is confounded by seasonal effects, which makes it more susceptible to error related to growth than the annual model. The quarterly Jones model's shorter period also implies there is likely to be more timing mismatch between the measurement of firm performance and the related non-discretionary accruals. This timing mismatch will result in greater noise in the abnormal accrual

[14] The average forecast errors reported correspond to the observations displayed in the figures, which are truncated for forecast errors below -0.20 and above 0.20. Results are qualitatively similar for the full sample Winsorized at 1% and 99% level.

estimates. Thus, I use annual abnormal accruals (ABACC) estimated from a time-series modified Jones model to determine if firms issuing quarterly guidance have larger abnormal accruals in years where they narrowly beat earnings benchmarks.[15] The form of the model is

$$ABACC_{it} = \beta_1 GUIDING_{it} + \beta_2 MBAF_{it} + \beta_3 MBAF2 +_{it} + \beta_4 MBMF_{it} + \beta_5 MBMF2 +_{it} + \beta_6 GUIDING_{it} * MBAF_{it} + \beta_7 GUIDING_{it} * MBAF2 +_{it} + \beta_8 ANALYSTS_{it-1} + \beta_9 NOA_{it-1} + \beta_{10} RTNVOL_{it-1} + \beta_{11} SIZE_{it-1} + \beta_{12} ALTMANZ_{it-1} + \beta_{13} FINNEED_{it-1} + \beta_{14} MTB_{it-1} + \beta_{15} ROA_{it-1} + \beta_{16} SALESGR_{it-1} + \sum \beta_j INDUSTRY_j + \sum \beta_k YEAR_k + \varepsilon_{it} \quad (1)$$

where

$ABACC_{it}$ = annual abnormal accruals for firm *i* in fiscal year *t* calculated using a time-series modified Jones model;
$GUIDING_{it}$ = indicator variable equal to one if firm *i* issues guidance in at least six of the last eight quarters, and zero otherwise;
$MBAF_{it}$ = indicator variable equal to one if firm *i*'s earnings are zero to one cent above the median analyst forecast for firm *i* in only the most recent fiscal quarter, and zero otherwise;
$MBAF2+_{it}$ = indicator variable equal to one if firm *i*'s earnings are zero to one cent above the median analyst forecast for firm *i* for the last two quarters or more, and zero otherwise;
$MBMF_{it}$ = indicator variable equal to one if firm *i*'s earnings are zero to one cent above the lower bound of management guidance in only the most recent fiscal quarter, and zero otherwise;
$MBMF2+_{it}$ = indicator variable equal to one if firm *i*'s earnings are zero to one cent above the lower bound of management guidance for the last two quarters or more, and zero otherwise;
$ANALYSTS_{it}$ = natural logarithm of one plus the number of analysts covering firm *i* at the end of fiscal year *t*;
NOA_{it} = net operating assets for firm *i* at the end of fiscal year *t*;
$RTNVOL_{it}$ = standard deviation of daily returns for firm *i* over the 250 trading days prior to the end of fiscal year *t*;
$SIZE_{it}$ = natural logarithm of the market value of equity for firm *i* at the end of fiscal year *t*;
$ALTMANZ_{it}$ = Altman's Z-score for firm *i* at the end of fiscal year *t*;
$FINNEED_{it}$ = indicator variable equal to one if firm *i* will need to raise capital based on cash flow from operations in fiscal year *t* and average capital expenditures over the prior three fiscal years, and zero otherwise;
MTB_{it} = market-to-book ratio for firm *i* at the end of fiscal year *t*;
ROA_{it} = return on assets for firm *i* in fiscal year *t*;
$SALESGR_{it}$ = sales growth percentage for firm *i* from fiscal year *t-1* to fiscal year *t*;
INDUSTRY = indicator variables equal to one if firm *i* is a member of the two-digit SIC in fiscal year *t*, and zero otherwise;
YEAR = indicator variables equal to one if the observation is for fiscal year *t*, and zero otherwise.

Complete variable definitions are available in Appendix 1.

[15] An analysis using a quarterly model similar to Collins, Pungaliya, and Vijh (2010) showed no evidence of higher abnormal accruals for firms meeting or beating management forecast benchmarks or analyst forecast benchmarks. I continue to explore options for modeling quarterly abnormal accruals and explanations for the difference in findings between the annual and quarterly accrual models.

GUIDING is an indicator variable that partitions the sample by each firm's guidance behavior. It is equal to one for observations where guidance is issued in at least six of the last eight quarters and zero for other observations, which in this test have no guidance in the last eight quarters.

MBAF and MBMF are indicator variables equal to one if the firm meets or beats by one cent the last consensus analyst forecast or the lower bound of the last management forecast in only the most recent fiscal quarter. MBAF2+ and MBMF2+ are equal to one if the firm meets or beats by one cent the analyst forecasts or the management forecasts for the last two quarters or more. These variables help align the quarterly benchmark-beating behavior with the annual measure of abnormal accruals, which reflects accruals recorded in all four fiscal quarters. MBAF and MBAF2+ are expected to be positively related to ABACC because prior studies have shown firms use abnormal accruals to meet or beat analyst forecasts (e.g., Payne and Robb 2000; Matsumoto 2002; Ayers, Jiang, and Yeung 2006; Burgstahler and Eams 2006). A positive (negative) coefficient on the interaction of GUIDING and MBAF and the interaction of GUIDING and MBAF2+ would be consistent with guiding (non-guiding) firms using larger accruals to meet or beat analyst forecasts. A positive coefficient is expected on MBMF and MBMF2+ because prior evidence shows that firms use positive accruals to manage earnings to achieve their own forecasts (Hribar and Yang 2010).

The model includes a number of control variables that prior literature links with earnings management opportunities and incentives. Following prior studies, I control for the number of ANALYSTS following the firm because it proxies for litigation risk (Kasznik 1999) and because analyst monitoring may constrain earnings management (Liu 2008). Earnings management may also be constrained by net operating assets (NOA), which reflects the results of past earnings management activity (Barton and Simko 2002). Return volatility (RTNVOL) and firm SIZE are included to proxy for forecasting difficulty and information environment effects, which may affect companies' earnings management to achieve benchmarks (e.g., Brown 1997; Das, Levine, and Sivaramakrishnan 1998). I control for financial distress (ALTMANZ) and external financing need (FINNEED) because these

conditions increase incentives to overstate earnings (Jiang 2008; Dechow, Sloan, and Sweeney 1996). Firms with high market-to-book ratios (MTB) are also expected to have larger abnormal accruals because these firms face large negative returns for missing analyst forecasts (Skinner and Sloan 2002). To control for performance motivations for earnings management, I include return on assets (ROA) and sales growth (SALESGR), which have also been shown to be correlated with errors in abnormal accrual estimates (McNichols 2000; Kothari, Leone, and Wasley 2005; Collins, Pungaliya, and Vijh 2010). Finally, I include INDUSTRY and YEAR fixed effects to control for litigation risk and other earnings management incentives that vary across industries and time.[16]

4.1.2 Abnormal Accruals Measurement

Abnormal accruals (ABACC), the dependent variable, is calculated using a time-series modified Jones Model. Following Kasznik (1999) and Hribar and Yang (2010), I include a term for the change in operating cash flow because Dechow (1994) shows that accruals are negatively related to changes in operating cash flow. I estimate the model below for each firm-year on up to 20 prior years of data. The estimation is limited, however, to firms that have the necessary data on COMPUSTAT for at least eight years, observations where beginning of the year total assets are greater than $1 million, and observations where the absolute value of total accruals is less than beginning of the year total assets. The form of the accrual model is[17]

$$TACC_{it} = \alpha_{0i} + \alpha_{1i}(1/ASSETS_{it}) + \alpha_{2i}(\Delta REV_{it} - \Delta AR_{it}) + \alpha_{3i}GPPE_{it} + \alpha_{4i}\Delta CFO_{it} + \varepsilon_{it} \quad (2)$$

where

$TACC_{it}$ = total accruals calculated from the statement of cash flows for firm *i* in fiscal year *t* as in Hribar and Collins (2002) and scaled by ASSETS;
$ASSETS_{it}$ = beginning of the year total assets for firm *i* in fiscal year *t*;

[16] Other potential controls variables include governance measures, such as equity compensation percentage and the percentage of independent directors. Prior literature (e.g., Larcker, Richardson, and Tuna 2007), however, does not provide clear evidence of a relation between governance measures and abnormal accruals or restatements. Inclusion of governance variables would also further reduce sample size. Thus, I do not include these variables in the model.
[17] I include an intercept in this model because Kothari, Leone, and Wasley (2005) find that it reduces model misspecification.

ΔREV_{it} = change in revenue for firm *i* from fiscal year *t-1* to fiscal year *t* scaled by ASSETS;
ΔAR_{it} = change in accounts receivable measured from the statement of cash flow for firm *i* in fiscal year *t* and scaled by ASSETS;
$GPPE_{it}$ = gross property, plant, and equipment for firm *i* at the end of fiscal year *t* scaled by ASSETS;
ΔCFO_{it} = change in operating cash flow for firm *i* from fiscal year *t-1* to fiscal year *t* scaled by ASSETS.

The parameters estimates from the model are then used in the following equation to calculate abnormal accruals:

$$ABACC_{it} = TACC_{it} - \hat{\alpha}_{0i} - \hat{\alpha}_{1i}(1/ASSETS_{it}) - \hat{\alpha}_{2i}(\Delta REV_{it} - \Delta AR_{it}) - \hat{\alpha}_{3i}GPPE_{it} - \hat{\alpha}_{4i}\Delta CFO_{it} \quad (3)$$

Table 2 displays the descriptive statistics for the estimation of the time-series modified Jones model. As expected, there is a low number of observations per regression (mean = 14) and a high R^2 (mean = 0.64) for the regressions on average. The coefficient on the adjusted changed in revenue ($\hat{\alpha}_2$) averages 0.059 and it has the predicted positive sign in about 67 percent of the regressions. The average coefficients on the gross property, plant, and equipment ($\hat{\alpha}_3$) and the change in operating cash flow ($\hat{\alpha}_4$) are -0.043 and -0.43 and these coefficients have the predicted signs in about 60 percent and 90 percent of the regressions respectively.

4.1.3 Descriptive Statistics for Abnormal Accrual Tests

Descriptive statistics for the abnormal accrual tests are provided in Table 3. Data requirements and eliminating firm-years with sporadic guidance limits the sample to 5,518 firm-year observations. GUIDING is equal to one for 1,715 firm-years or about 31 percent of the sample. On average firms in the sample are covered by approximately eight analysts and have market values of about $1.6 billion. The average market-to-book ratio is 3.37 and less than three percent of the firms need additional financing based on current operating cash flow and recent capital expenditures.

Table 3 Panel B separates the sample into guiding and non-guiding firm-years. The two groups are significantly different in mean and median for all the variables in the model, except for abnormal accruals (ABACC), the mean of the market-to-book ratio (MTB) and the median of sales growth

(SALESGR). In general, guiding firms are larger (mean SIZE = 7.67 versus 7.28) with a larger analyst following (mean ANALYSTS = 2.38 versus 2.14) and have lower return volatility (mean RTNVOL = 0.023 versus 0.026), less financial need (mean FINNEED = 0.004 versus 0.038) and lower financial distress (mean ALTMANZ = 5.46 versus 4.95).

Table 3 Panel C provides a correlation matrix for the variables in the model. In general, the correlations are low. The notable exceptions are the positive correlations between SIZE and analyst following (ANALYSTS), the positive correlation between ROA and the Altman Z-score (ALTMANZ), and the negative correlation between SIZE and return volatility (RTNVOL), all of which are expected.

4.1.4 Test of Hypothesis 1

Table 4 Panel A provides regression results to test the first hypothesis. The model is estimated using ordinary least squares (OLS) with firm-clustered (Rogers) standard errors. Explanatory power of the model is modest ($R^2 = 0.05$).

The coefficient on GUIDING and the coefficients on the indicator variables for single instances of benchmark beating (MBAF, MBMF, and the interaction of GUIDING and MBAF) are not significantly different from zero. The coefficients on indicator variables for consecutive instances of benchmark beating (MBAF2+, MBMF2+, and the interaction of GUIDING and MBAF2+), however, are all larger in magnitude and statistically significant, consistent with firms using more abnormal accruals to beat benchmarks two or more consecutive times compared to beating a benchmark only one time. MBAF2+ is positively related (coefficient = 0.012) to abnormal accruals (ABACC) at the five percent level, indicating firms use abnormal accruals to achieve analyst forecasts. The MBMF2+ coefficient (0.014) is positive and significant at the 10 percent level, indicating firms regularly issuing earnings guidance use abnormal accruals to achieve their own forecasts. The coefficient on the interaction of GUIDING and MBAF2+ (-0.017), however, is negative and significant at the five percent level, which indicates that firms regularly issuing earnings guidance reduce their use of abnormal accruals to achieve

analyst forecasts compared to non-guiding firms. This result is surprising, because survey evidence in Graham, Harvey, and Rajgopal (2005, p. 42) implies that managers view missing guided analysts forecasts as being more problematic than missing unguided analyst forecasts.

The remaining significant variables generally have predicted signs. The one exception is firm SIZE, which has a significantly positive coefficient of 0.005. The coefficient is expected to be negative because the better information environment for larger firms is expected to limit earnings management. Net operating assets (NOA) and analyst following (ANALYSTS) have negative coefficients (-0.005 and -0.007), consistent with accruals being constrained by past earnings management and analyst monitoring. ROA also has a significantly negative coefficient (-0.055), which is consistent with firms using abnormal accruals to smoothing earnings.

Table 4 Panel B provides additional information on guiding and non-guiding firms' accruals when they narrowly beat benchmarks. The sum of the coefficients on MBAF2+ and the interaction of GUIDING and MBAF2+ ($B_3 + B_7$) is -0.05 and the sum of the coefficients on MBAF and the interaction of GUIDING and MBAF ($B_2 + B_6$) is 0.008. Both sums are statistically insignificant, indicating that guiding firms do not use large abnormal accruals to beat analyst forecasts as non-guiding firms do. The panel also provides a comparison of the coefficients on MBAF2+ and MBMF2+ ($B_3 – B_5 = 0.002$) and a comparison of the coefficients on MBAF and MBMF ($B_3 – B_4 = 0.005$). Both differences are insignificant, indicating that there is no statistical difference between the abnormal accruals used by non-guiding firms to achieve analyst forecasts and the abnormal accruals used by guiding firms to achieve management guidance.[18] Combining this result with the result that guiding firms do not use significant abnormal accruals to achieve analyst forecasts, the evidence in Panel B is consistent with guiding and non-guiding firms using similar levels of abnormal accrual use to beat benchmarks.

[18] Inferences are unchanged if the tests include guiding firms' abnormal accruals to beat analyst forecasts in addition to their abnormal accruals to beat management forecasts.

In summary, there is distributional evidence consistent with non-guiding firms working to avoid missing analyst forecasts and with regularly guiding firms working to avoid missing both management forecasts and analyst forecasts. Multivariate testing shows that while regular guiders use abnormal accruals to achieve their own forecasts, they do not use abnormal accruals to achieve analyst forecasts as non-guiding firms do. Additional tests show that overall, guiding firms and non-guiding firms recognize similar levels of abnormal accruals to beat earnings benchmarks.

4.1.5 Sporadically Guiding Firms

In this section, I investigate earnings management of firms issuing guidance sporadically, that is, firms issuing guidance in one to five of the last eight quarters. Ex ante, it is unclear how sporadically guiding firms' abnormal accruals to achieve earnings benchmarks will compare to regularly guiding and non-guiding firms' abnormal accurals. Cheng, Subramanyam, and Zhang (2007) claim frequent earnings guidance focuses investors on short-term earnings performance, which puts additional pressure on managers to meet short-term targets. Bhojraj, Libby, and Yang (2010), however, argue that frequent guiders learn from experience and commit more resources to making earnings forecasts, which would reduce the use of abnormal accruals to achieve inaccurate guidance numbers. Differences in motives leading to the guidance patterns may also affect the relation between guidance and earnings management. Firms issuing regular guidance may do so as part of a policy to reduce information asymmetry between managers and investors, whereas sporadic guiders may only issue guidance to correct overoptimistic analyst expectations (Bhojraj, Libby, and Yang 2010).

Additional analysis (not tablulated here) shows some differences between sporadically guiding firms and regularly guiding firms. Sporadic guiders have a slightly shorter average forecast horizon of 52 days before quarter end compared to 55 days for regularly guiding firms (p-value <0.001). Sporadically guiding firms also display significantly larger discontinuities compared to regularly guiding firms in both their analyst forecast errors (standardized difference between discontinuities = 2.13) and their management forecast errors (standardized difference between discontinuities = 2.63), consistent with

sporadically guiding firms engaging in more benchmark beating behavior relative to regularly guiding and non-guiding firms.

Regression results investigating abnormal accruals (also untabulated) show that sporadically guiding firms behave somewhat similarly to non-guiding firms. Sporadically guiding firms have large abnormal accruals when they narrowly beat analyst forecasts once (coefficient = 0.010) and in consecutive quarters (coefficient = 0.009), both significant at the 10 percent level. Further, they do not have significant accruals when they narrowly beat management forecasts in one (coefficient = 0.011) quarter or in consecutive (coefficient = -0.002) quarters. While their abnormal accruals are not significantly smaller than regularly guiding firms' abnormal accruals when narrowly beating management forecasts (coefficient difference = 0.004 for one quarter, -0.016 for consecutive quarters), sporadically guiding firms' aggregate abnormal accruals are similar to both regularly guiding and non-guiding firms.

In sum, the results for sporadic guiders show that these firms display more distributional evidence of benchmark beating relative to both regularly guiding and non-guiding firms. A multivariate analysis of abnormal accruals shows that the larger discontinuities in forecast errors are not associated with more earnings management. In fact, aggregate earnings management for sporadically guiding firms is similar to both regularly guiding and non-guiding firms.

4.2 Accounting Irregularities

4.2.1 Method to Test Hypothesis 2

I further investigate the effects of quarterly earnings guidance on earnings management using a matched sample design to examine whether guidance frequency affects the likelihood of firms having accounting irregularities. Accounting irregularities are evidence of egregious earnings management that has led to a restatement that is attributed to or investigated for fraud.

I identify 168 accounting irregularities occurring between 1997 and 2005 for firms that have the requisite data on COMPUSTAT, I/B/E/S, and CRSP, and that are not utilities (SIC 49) or financial firms

(SIC 60-69). I then create a matched sample for these irregularity observations using other firm observations in the same two-digit SIC and in the same fiscal year as when the irregularity began. Within each industry-year group, the observations are matched by market value of equity (MVE) quintile, change in return on assets (CHROA) tercile, sales growth (SALESGR) tercile, and closest market-to-book ratio (MTB). Matching on the change in return on assets and sales growth helps to control for aspects of firm performance, which Dechow, Ge, Larson, and Sloan (2009) find are correlated with the likelihood of SEC Accounting and Auditing Enforcement Releases.[19] Matches are found for 132 of the 168 accounting irregularities.

To test the effect of guidance on the likelihood of accounting irregularities, I use the pair-wise difference of variables predicted to affect the likelihood of irregularity in a logistic regression where the dependent variable is set to one for all observations (Cram, Karan, and Stuart 2009). The number of quarters for which the firm issues guidance in the fiscal year (GUIDECOUNT) is used rather than GUIDING, issuing guidance in at least six of the last eight quarters, because the latter variable would result in reducing the already small sample. The form of the logistic model is

$$ONE_{it} = \gamma_1 DIFF\_GUIDECOUNT_{it} + \gamma_2 DIFF\_ANALYTS_{it-1} + \gamma_3 DIFF\_NOA_{it-1} + \gamma_4 DIFF\_RTNVOL_{it-1} + \gamma_5 DIFF\_SIZE_{it-1} + \gamma_6 DIFF\_ALTMANZ_{it-1} + \gamma_7 DIFF\_FINNEED_{it-1} + \gamma_8 DIFF\_MTB_{it-1} + \gamma_9 DIFF\_ROA_{it-1} + \gamma_{10} DIFF\_CHROA_{it-1} + \gamma_{11} DIFF\_SALESGR_{it-1} + \varepsilon_{it} \quad (5)$$

where

ONE_{it} = indicator variable set to one for all observations;
$GUIDECOUNT_{it}$ = count of the number of quarters for which firm *i* issues earnings guidance in fiscal year *t*;
$CHROA_{it}$ = change in return on assets for firm *i* from fiscal year *t-1* to fiscal year *t*.

All other variables are defined as in Model 1. Complete variable definitions are in Appendix 1. The pre-fix "DIFF_" is added to the variable names to indicate that the pair-wise differences are being used.

[19] Prior literature (e.g., Beneish 1997; Dechow, Ge, Larson, and Sloan 2009) find a number of variables that are contemporaneously associated with the likelihood of financial restatement, such as abnormal accruals or change in receivables. My focus, however, is on the antecedents of accounting irregularities, not identifying irregularities once they occur.

4.2.2 Descriptive Statistics for Accounting Irregularities Test

Descriptive statistics for the 132 firms with accounting irregularities and 132 matched control firms are provided in Table 5 Panel A. The table shows the matching was effective at eliminating differences in most of the variables used in the matching procedure. The mean of GUIDECOUNT, the variable of interest, is 0.40 for irregularity firms and 0.42 for non-irregularity firms, which is statistically insignificant. Mean net operating assets (NOA) is statistically higher for irregularity firms (1.71 versus 0.96) and median Altmanz Z-Score (ALTMANZ) is higher for non-irregularity firms (4.96 versus 3.55). Further, despite matching by sales growth tercile within industry and year, the mean sales growth is significantly higher for irregularity firms (0.46 versus 0.27).

4.2.3 Test of Hypothesis 2

Table 5 Panel B provides the results of the logistic regression. None of the variables in the model, including GUIDECOUNT, is significant. These results are consistent with guidance not having an effect on the likelihood of accounting irregularities. While this result appears to be consistent with the abnormal accrual results, I must caution against drawing strong inferences from this test. Most of the irregularity observations (81 of 132) occur before Regulation FD when firms could use private guidance to influence analyst forecasts without making public commitment to a certain earnings level. Further, the lack of any significant coefficients in the test may indicate that the test has low power.

4.3 Endogeneity

Endogeneity could potentially affect the results in this study. One possibility is that there is a variable omitted from the models that affects both quarterly guidance and earnings management. For instance, quarterly earnings guidance and earnings management could both be firm responses to some external pressure to meet earnings benchmarks. If this pressure is not identified in the models, tests could be affected by a spurious relation between guidance and earnings management. A second possibility is the relation between guidance and earnings management is simultaneously determined. Managers may

issue guidance that makes managed earnings appear more credible or they may use guidance and earnings management as substitute mechanisms for meeting analyst forecasts.

After reviewing the literature, I am not convinced that current models of guidance behavior are adequate for use in an instrumental variables approach. This approach relies on identifying instrumental variables that are correlated with the endogenous variable of interest, but that are otherwise exogenous to the model. Larcker and Rusticus (2010) note that when instruments are not exogenous, the instrumental variables approach will produce estimates that are more biased than ordinary least squares unless there is a strong correlation between the instrument and the endogenous variable of interest. Prior studies have used variables such as the number of analysts following the firms, institutional holdings, and the absolute value of analyst forecast errors (e.g., Kasznik 1999) as instruments. It is not clear, however, these variables are sufficiently exogenous for instrumental variable estimation, especially because they have been linked to earnings management in other studies (e.g., Chung, Firth, and Kim 2002; Burgstahler and Eams 2006; Yu 2008).

I continue to explore options for instrumental variables to address the potential endogeneity issue. Despite concerns about endogeneity, the results in the paper may still be interpreted as evidence that given firms' choices to issue earnings guidance, guiding and non-guiding firms' aggregate earnings management is similar. This interpretation is important because it is consistent with firms choosing to regularly issue guidance not increasing their abnormal accrual use above the level of firms choosing not to guide.

5. Conclusion

This study investigates whether quarterly earnings guidance increases or reduces earnings management using benchmark beating evidence and the likelihood of accounting irregularities. Using a post-Regulation Fair Disclosure sample of firms covered by at least three analysts, I provide evidence of firms' benchmark beating in their distributions of analyst forecast errors and management forecast errors

and in their use of abnormal accruals to beat benchmarks. I find firms regularly issuing earnings guidance display a discontinuity in their distribution of management forecast errors and a significantly larger discontinuity in their distribution of analyst forecast errors compared to non-guiding firms. I also investigate the benchmark-beating behavior of firms that sporadically provide guidance and find that these firms display more evidence of benchmark beating compared to regularly guiding firms in both the distribution of analyst forecast errors and the distribution of management forecast errors.

Multivariate analysis provides a somewhat different picture of firms' earnings management activities. I find that regularly guiding firms have large abnormal accruals when they narrowly beat management guidance in consecutive quarters and that non-guiding firms have large abnormal accruals when they narrowly beat analyst forecasts in consecutive quarters. This evidence is consistent with discontinuities in the forecast error distributions being caused by abnormal accrual recognition. Guiding firms, however, do not have large abnormal accruals when narrowly beating analyst forecasts in consecutive quarters. Aggregate abnormal accrual use to beat benchmarks is similar for guiding and non-guiding firms. Sporadically guiding firms' abnormal accrual use to beat benchmarks is also similar to both regularly guiding and non-guiding firms. Further, I find no evidence that quarterly guidance is associated with more egregious earnings management, although this test may have low power because it is based on a sample of only 132 accounting irregularities.

There are several possible reasons why guiding firms have discontinuities around zero analyst forecast error, even though they do not use large abnormal accruals to achieve this benchmark. One explanation is that guidance narrows the distribution of analyst forecasts around the true earnings number, making earnings targets achievable with only minimal abnormal accrual use. Guidance may also influence the items included in analyst forecasts (Christensen, Merkely, Tucker, and Venkatarman 2010), which could similarly affect the distribution of analyst forecast errors. Another possibility is that guiding firms use real activities management to achieve analyst forecasts, consistent with the finding in Cheng, Subramanyam, and Zhang (2007). Future research can investigate the plausibility of these explanations.

The findings in this paper should be informative to managers considering changes to their guidance policies, to auditors assessing risk, and to regulators contemplating restrictions on earnings guidance. In total, the results provide evidence that while guiding and non-guiding firms manage earnings to different benchmarks; their aggregate earnings management is similar. This finding is consistent with the conclusion that firms choosing to provide guidance do not significantly increase their earnings management relative to firms choosing not to guide. Future research could explore other effects of issuing guidance regularly versus sporadically or could investigate differences in earnings management for other partitions of guidance behavior.

References

Association for Investment and Management Research. 2003. Earnings Guidance: Essential Disclosure or Market Manipulation? (January 15).

Ajinkya, B. B., and M. J. Gift.1984. Corporate Managers' Earnings Forecasts and Symmetrical Adjustments of Market Expectations. *Journal of Accounting Research* 22 (2): 425-431.

Anilowski, C., M. Feng, and D. J. Skinner. 2007. Does Earnings Guidance Affect Market Returns? The Nature and Information Content of Aggregate Earnings Guidance. *Journal of Accounting and Economics* 44: 36-63.

Ayers, B. C., J. Jiang and P. E. Yeung. 2006.Discretionary Accruals and Earnings Management: An Analysis of Pseudo Earnings Targets. *The Accounting Review* 81 (3): 617-652.

Baik, B., and G. Jiang. 2006. The Use of Management Forecasts to Dampen Analysts' Expectations. *Journal of Accounting and Public Policy* 25: 531-553.

Ball, R., S. Jayaraman, and L. Shivakumar. 2009. Audited Financial Reporting and Voluntary Disclosure as Complements: A Test of the Confirmation Hypothesis. Working paper, University of Chicago.

Ball, R., and L. Shivakumar. 2008. How much new information is there in earnings? *Journal of Accounting and Economics* 46 (5): 975-1016.

Bansal, P., and W. Dabrowskiv. 2007. Nortel pays $35 mln to settle SEC fraud case. *Reuters* (October 15).

Barton, J. ,and P. Simko. 2002. The Balance Sheet as an Earnings Management Constraint. *The Accounting Review* 77 (Supplement): 1-27

Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics* 33 (2): 173-204.

Bartov, E., F. Gul, and J. Tsui. 2001. Discretionary-accruals models and audit qualifications. *Journal of Accounting and Economics* 30: 241-452.

Beneish, M. 1997. Detecting GAAP Violation: Implications for Assessing Earnings Management among Firms with Extreme Financial Performance. *Journal of Accounting and Public Policy* 16: 271-309.

Beyer, A., D. Cohen, T., Lys, and B. Walther. 2009. The Financial Reporting Environment: Review of the Recent Literature. *Journal of Accounting and Economics* (forthcoming).

Bhojraj, S., R. Libby, and H.Yang (2010). Analyzing Guidance at the Firm Level: The Association Between Guidance Frequency, Guidance Properties, and Market Reactions. Working paper, Cornell University.

Brown, L. D. 1997. To Analyst Forecasting Errors: Additional Evidence. *Financial Analysts Journal* 53 (6): 81-98.

Brown, L. D., and A. S. Pinello. 2007. To What Extent Does the Financial Reporting Process Curb Earnings Surprise Games? *Journal of Accounting Research* 45 (5): 947-981.

Buffett, W. 2000. Annual Report. *Berkshire Hathaway*.

Burgstahler, D., and M. Eames. 2006. Management of Earnings and Analysts' Forecasts to Achieve Zero and Small Positive Earnings Surprises. *Journal of Business, Finance & Accounting* 33 (5): 633-652.

Chen, S. 2004. Why do managers fail to meet their own forecasts? Working paper, University of Washington.

Chen, S., D. Matsumoto, and S. Rajgopal. 2010. Is Silence Golden? An Empirical Analysis of Firms that Stop Giving Quarterly Earnings Guidance in the Post Regulation-FD Period. *Journal of Accounting and Economics* (forthcoming).

Cheng, M., K. R. Subramanyam, and Y. Zhang. 2007. Earnings Guidance and Managerial Myopia. Working paper, University of Southern California.

Christensen, T. E., K. J. Merkley, J. W. Tucker, and S. Venkataraman, 2010. Do managers use earnings guidance to influence street exclusions? Working paper, Brigham Young University.

Chuk, E., D. Matsumoto, and G. S. Miller, 2009. Assessing Methods of Identifying Management Forecasts: CIG vs. Researcher Collected. Working paper, University of Washington.

Chung, R., M. Firth and J. Kim. 2002. Institutional monitoring and opportunistic earnings management. *Journal of Corporate Finance* 8: 29-48.

Ciesielski, J. 2006. The High Road on Earnings Guidance: Stop It! *The AAO Weblog* (July 27).

Coller, M., and T. Yohn. 1997. Management Forecasts and Information Asymmetry: An Examination of Bid-Ask Spreads. *Journal of Accounting Research* 35 (2): 181-191.

Collins, D.W., R. S. Pungaliya, and A. M. Vijh (2010). The Confounding Effects of Firm Growth on Tests of Earnings Management. Working paper, The University of Iowa.

Committee for Economic Development. 2007. Built to Last: Focusing Corporations on Long-Term Performance. Available at: http://ced.issuelab.org/research/listing/built_to_last_focusing_corporations_on_long_term_performance.

Cotter, J., I. Tuna, and P. D. Wysocki. 2006. Expectations Management and Beatable Targets: How Do Analysts React to Explicit Earnings Guidance? *Contemporary Accounting Research* 23 (3): 593-624.

Cram, D. P., V. Karan and I. Stuart. 2009. Three Threats to Validity of Choice-Based and Matched-Sample Studies in Accounting. *Contemporary Accounting Research* 26 (2): 477-516.

Das, S., C. Levine, and K. Sivaramakrishnan. 1998. Earnings Predictability and Bias in Analysts' Earnings Forecasts. *The Accounting Review* 73 (2): 277-294.

Dechow, P. 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accurals. *Journal of Accounting and Economics* 18: 3-42.

Dechow, P., W. Ge, C. Larson and R. Sloan. 2009. Predicting Material Accounting Misstatements. Working paper, University of California Berkeley.

Dechow, P., R. Sloan and A. Sweeney. 1995. Detecting Earnings Management. *The Accounting Review* 70 (2): 193-225.

Dechow, P., R. Sloan and A. Sweeney. 1996. Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC. *Contemporary Accounting Research* 13 (1): 1-36.

Degeorge, F., J. Patel, and R. Zeckhauser. 1999. Earnings management to exceed thresholds. *Journal of Business* 72: 1-33.

Diamond, D. 1985. Optimal Release of Information by Firms. *Journal of Finance* 40 (4): 1071-1094.

Dutta, S., and F. Gigler. 2002. The Effect of Earnings Forecasts on Earnings Management. *Journal of Accounting Research* 40 (3): 631-655.

Farrell, K., and D. Whidbee. 2003. Impact of firm performance expectations on CEO turnover and replacement decisions. *Journal of Accounting and Economics* 36: 165-196.

Gong, G., L. Y. Li and H. Xie. 2009. The Association between Management Earnings Forecast Errors and Accruals. *The Accounting Review* 84 (2): 497-530.

Graham, E. R., C. R. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40 (1-3): 3-73.

Hennes, K., A. Leone, and B. Miller. 2008. The Importance of Distinguishing Errors from Irregularities in Restatement Research: The Case of Restatements and CEO/CFO Turnover. *The Accounting Review* 83 (6): 1487-1519.

Hribar, P., and D.W. Collins. 2002. Errors in Estimating Accruals: Implications for Empirical Research. *Journal of Accounting Research* 40 (1): 105-134.

Hribar, P., and H. Yang. 2010. Does CEO overconfidence affect management forecasting and subsequent earnings management? Working paper, The University of Iowa.

Hu, B., and C. Jiang. 2008. The Impact of Earnings Guidance Cessation: Information Asymmetry and Earnings Management. Working paper, The University of Memphis.

Hutton, A. P. 2005. Determinants of Managerial Earnings Guidance Prior to Regulation Fair Disclosure and Bias in Analysts' Earnings Forecasts. *Contemporary Accounting Research* 22 (4): 867-914.

Jiang, J. 2008. Beating Earnings Benchmarks and the Cost of Debt. *The Accounting Review* 83 (2): 377-416.

Jo, H., and Y. Kim. 2007. Disclosure frequency and earnings management. *Journal of Financial Economics* 84: 561-590.

Kasznik, R. 1999. On the Association between Voluntary Disclosure and Earnings Management. *Journal of Accounting Research* 37 (1): 57-81.

Kasznik, R., and M. McNichols. 2002. Does Meeting Earnings Expectations Matter? Evidence from Analyst Forecast Revisions and Share Prices. *Journal of Accounting Research* 40 (3): 727-759.

Kothari, S. P., A.J. Leone and C.E. Wasley. 2005. Performance Matched Discretionary Accrual Measures. *Journal of Accounting and Economics* 39: 163-197.

Krehmeyer, D., M. Orsagh, and K. N. Schacht, 2006. Breaking the Short-Term Cycle: Discussion and Recommendations on How Corporate Leaders, Asset Managers, Investors, and Analysts Can Refocus on Long-Term Value. *Centre for Financial Market Integrity (CFA Institute)*.

Krishnan, G., M. Pevzner, and P. Sengupta. 2009. How Do Auditors View Managers' Voluntary Disclosure Strategy? The Effect of Earnings Guidance on Audit Fees. Working paper, Lehigh University.

Kueppers, R.J., N. M. Sandford, and T. Thomspon Jr. 2009. Earnings Guidance: The Current State of Play. *Deloitte*.

Lambert, R., C. Leuz, and R. Verrecchiai. 2007. Accounting Information, Disclosure, and the Cost of Capital. *Journal of Accounting Research* 45 (2): 385-420.

Larcker, D.F., S. A. Richardson, and I. Tuna. 2007. Corporate Governance, Accounting Outcomes, and Organizational Performance. *The Accounting Review* 82 (2): 963-1008.

Larcker, D.F., and T. O. Rusticus. 2010. On the use of instrumental variables in accounting research. *Journal of Accounting and Economics* 49(3): 186-205.

Liu, A. 2008. Analysts, Institutional Investors, and Managers' Trade-off between Earnings and Expectations Management. Working paper, University of Connecticut.

Liu, M. H., S. T. Tiras, and Z. Zhuang. 2008. Audit Committees and Earnings Expectations Management. Working paper, Louisiana State University.

Matsumoto, D. 2002. Management's Incentives to Avoid Negative Earnings Surprises. *The Accounting Review* 77 (3): 483-514.

Matsunaga, S., and C. Park. 2001. The Effect of Missing a Quarterly Earnings Benchmark on the CEO's Annual Bonus . *Accounting Review* 76 (3): 313-332.

McNichols, M. 2000. Research design issues in earnings management studies. *Journal of Accounting and Public Policy* 19: 313-345.

Miller, G. S. 2009. Should Managers Provide Forecast of Earnings? Committee on Capital Markets Regulation.

Mergenthaler, R., S. Rajgopal, and S. Srinivasan. 2008. CEO and CFO Career Consequences to Missing Quarterly Earnings Benchmarks. *Working paper*, Harvard University.

Payne, J. L., and S. G. Robb 2000. Earnings Management: The Effect of Ex Ante Earnings Expectations. *Journal of Accounting, Auditing, and Finance* 15 (4): 371-392.

Rees, L., and R. Wynalda. 2008. An Examination of First Call's Company Issued Guidance Database. *Advances in Accounting 23*: 147-177.

Richardson, S., S. H. Teoh, and P. Wysocki. 2004. The Walk-down to Beatable Analyst Forecasts: The Role of Equity Issuance and Insider Trading Incentives. *Contemporary Accounting Research* 21 (4): 885-924.

Schwartz, W.C. 2001. Managing Earnings Surprises. Working paper, The University of Iowa.

Securities and Exchange Commission (SEC). 2009a. SEC Announces $35 Million Fair Fund Distribution to Defrauded Cardinal Health Investors. Washington, D.C.: SEC.

Securities and Exchange Commission (SEC). 2009b. SEC Charges Verifone for Artificially Inflating Its Income. Washington, D.C.: SEC.

Skinner, D., and R. Sloan. 2002. Earnings Surprises, Growth Expectations, and Stock Returns or Don't Let an Earnings Torpedo Sink Your Portfolio. *Review of Accounting Studies 7*: 289-312.

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

Taub, S. 2006. Trade Groups: Drop Quarterly Guidance. *CFO.com* (July 25): 1.

Trueman, B. 1986. Why do managers voluntarily release earnings forecasts? *Journal of Accounting and Economics* 8 (1): 53-71.

Yu, F. 2007. Analyst coverage and earnings management. *Journal of Financial Economics* 88: 245-271

Appendix 1. Variable Definitions

Variable	Definition
ABACC	Annual abnormal accruals calculated using a time-series modified Jones Model. Data are from COMPUSTAT.
ALTMANZ	Altman's Z-score (1.2*(ACT-LCT)/AT + 1.4*(RE/AT) + 3.3*(OIADP/AT) + 0.6*(PRCC_F*CSHO)/LT + 1*(SALE/AT)) at the end of fiscal year. Data are from COMPUSTAT.
ANALYSTS	Natural logarithm of one plus the number of analysts providing estimates (NUMEST) for the firm at the end of the fiscal year. Data are obtained from the I/B/E/S Unadjusted Summary File.
CHROA	Change in return on assets (IB_t/AT_t - IB_{t-1}/AT_{t-1}) for the firm from the prior fiscal year to the current fiscal year. Data are from COMPUSTAT.
FINNEED	Indicator variable equal to one if the firm will need to raise capital based on cash flow from operations (OANCF) and average capital expenditures (CAPXY) over the prior three years, and zero otherwise. Firms are considered to need capital if the difference between cash flow from operations and average capital expenditures scaled by current assets (ACT) is less than -0.5. This definition is similar to Dechow, Sloan, and Sweeney (1996). Data are from COMPUSTAT.
GUIDECOUNT	Count of the number of quarters for which the firm provides earnings guidance in the current fiscal year. Data are from the I/B/E/S Guidance File.
GUIDING	Indicator variable equal to one if the firm provides quarterly earnings guidance in at least six of the last 8 quarters, and zero otherwise. All other firm-years are excluded from the sample. Data are from the I/B/E/S Guidance File.
MBAF	Indicator variable equal to one if the firm's earnings are zero to one cent above the final median consensus analyst forecast in only the most recent fiscal quarter, and zero otherwise. Data are from the I/B/E/S Unadjusted Summary File.
MBAF2+	Indicator variable equal to one if the firm's earnings are zero to one cent above the final median consensus analyst forecast for the last two quarters or more, and zero otherwise. Data are from the I/B/E/S Unadjusted Summary File.
MBMF	Indicator variable equal to one if the firm's earnings are zero to one cent above the lower bound of management guidance in only the most recent fiscal quarter, and zero otherwise. Data are from the I/B/E/S Unadjusted Summary File and the I/B/E/S Guidance File.
MBMF2+	Indicator variable equal to one if the firm's earnings are zero to one cent above the lower bound of management guidance for the last two quarters or more, and zero otherwise. Data are from the I/B/E/S Unadjusted Summary File and the I/B/E/S Guidance File.
MTB	Market-to-book ratio (PRCC_F*CSHO/SEQ) for the firm at the end of the fiscal year. Data are from COMPUSTAT.
NOA	Net operating assets (AT-LT-CHE+DLC+DLTT) scaled by prior year's sales (SALE) for the firm at the end of the fiscal year. This definition is similar to Hribar and Yang (2010). Data are from COMPUSTAT.
ONE	An indicator variable set to one for all observations.
ROA	Return on assets (IB_t/AT_t) for the firm in the current fiscal year. Data are from COMPUSTAT.
RTNVOL	Standard deviation of returns calculated over the previous 250 trading days. A minimum of 100 trading days is required. Data are from the CRSP Daily File.
SALESGR	Change in sales for the firm from the prior fiscal year to the current fiscal year scaled by sales for the prior fiscal year (($SALE_t$ - $SALE_{t-1}$)/ $SALE_{t-1}$). Data are from COMPUSTAT.
SIZE	Natural logarithm of market value of equity (PRCC_F*CSHO) for the firm at the end of the year. Data are from COMPUSTAT.

Figure 1. Quarterly Guidance Timing

This figure displays the frequency of firms' quarterly guidance across biweekly periods leading up to the earnings announcement. Period zero includes days -14 through -1 where day zero is the earnings announcement date. Quarterly earnings forecasts made in periods -1 and 0 are considered earnings warnings and are not counted as guidance. Approximately 10% of quarterly earnings guidance occurs before the prior fiscal quarter end and is excluded from the sample. A total of 23,981 instances of guidance are displayed in the figure.

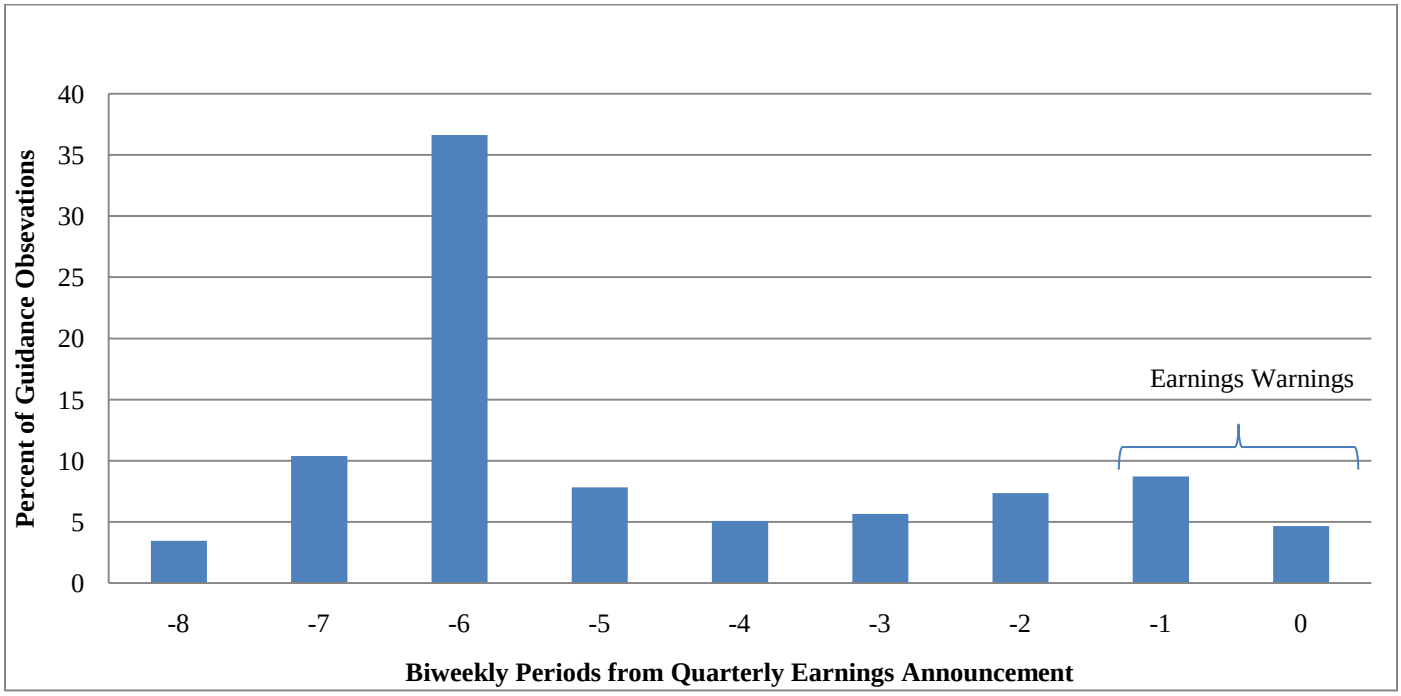
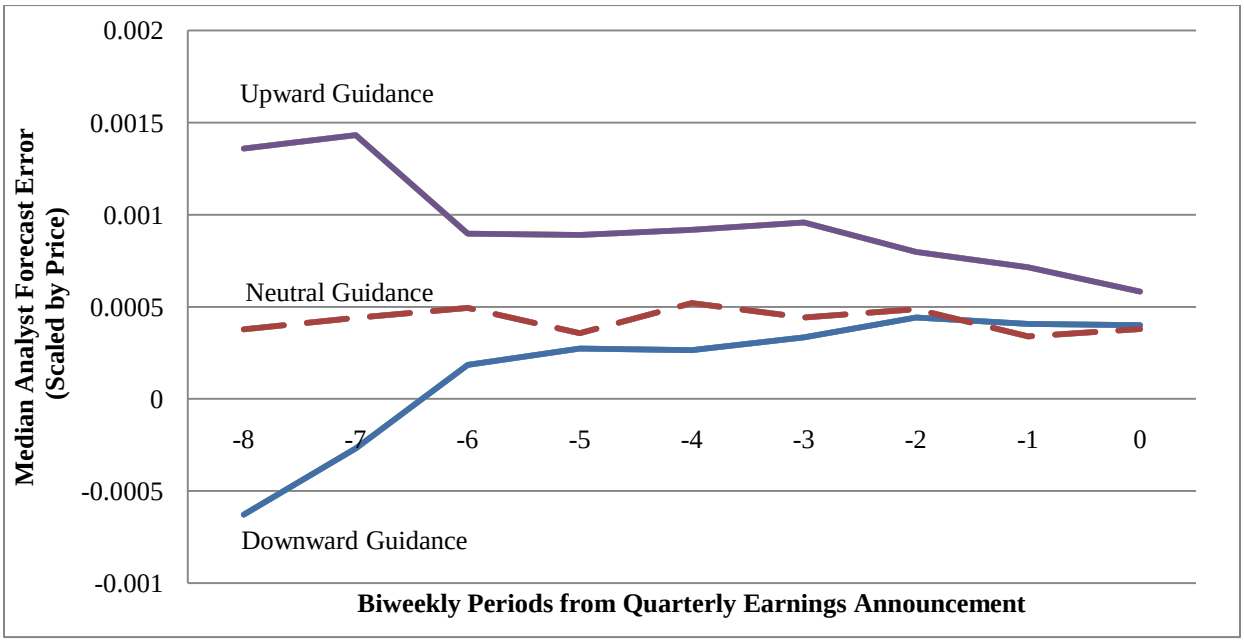


Figure 2. Quarterly Analyst Forecast Path

This figure displays the path of quarterly analyst forecasts in biweekly periods leading up to earnings announcements. Each point on the graph is the error of the median analyst forecast made in the prior two weeks scaled by price. Period zero includes days -14 through -1 where day zero is the earnings announcement date. The sign of the analyst forecast errors is maintained so that a decrease in signed analyst forecast error or a "walk-down" is displayed in the figure as upward movement. Medians from a total of 135,472 consensus forecasts are displayed across the two panels.

Panel A: Analyst Forecast Path when Guidance is Provided



Panel B: Analyst Forecast Path when No Guidance is Provided

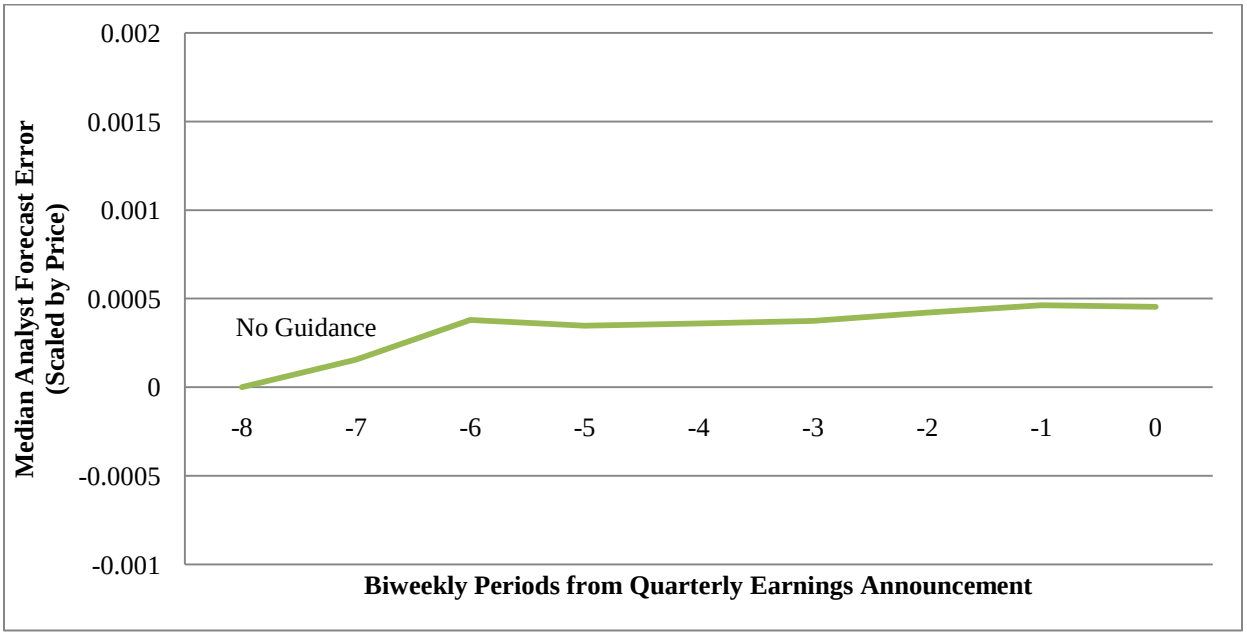
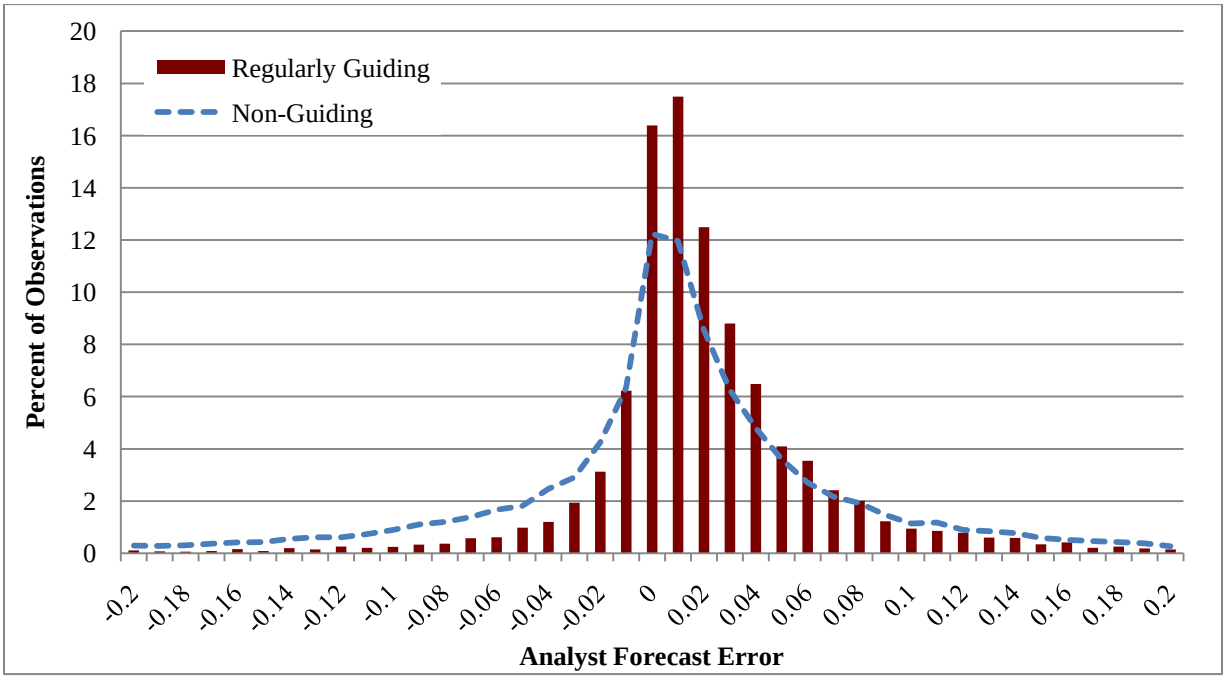


Figure 3. Distributional Evidence of Benchmark Beating

Panel A: Analyst Forecasts Errors

This panel displays the distribution of quarterly analyst forecast errors for regularly guiding and non-guiding firms. Analyst forecast error is measured as reported earnings less the median of the last consensus forecast prior to the earnings announcement. The figure displays 8,680 analyst forecast errors for regularly guiding firms and 25,807 analyst forecast errors for non-guiding firms.



Panel B: Management Forecast Errors

This panel displays the distribution of management forecast errors for regularly guiding firms. Management forecast error is measured as reported earnings less the lower bound of the last guidance issued prior to the earnings announcement. The figure displays 7,617 management forecast errors.

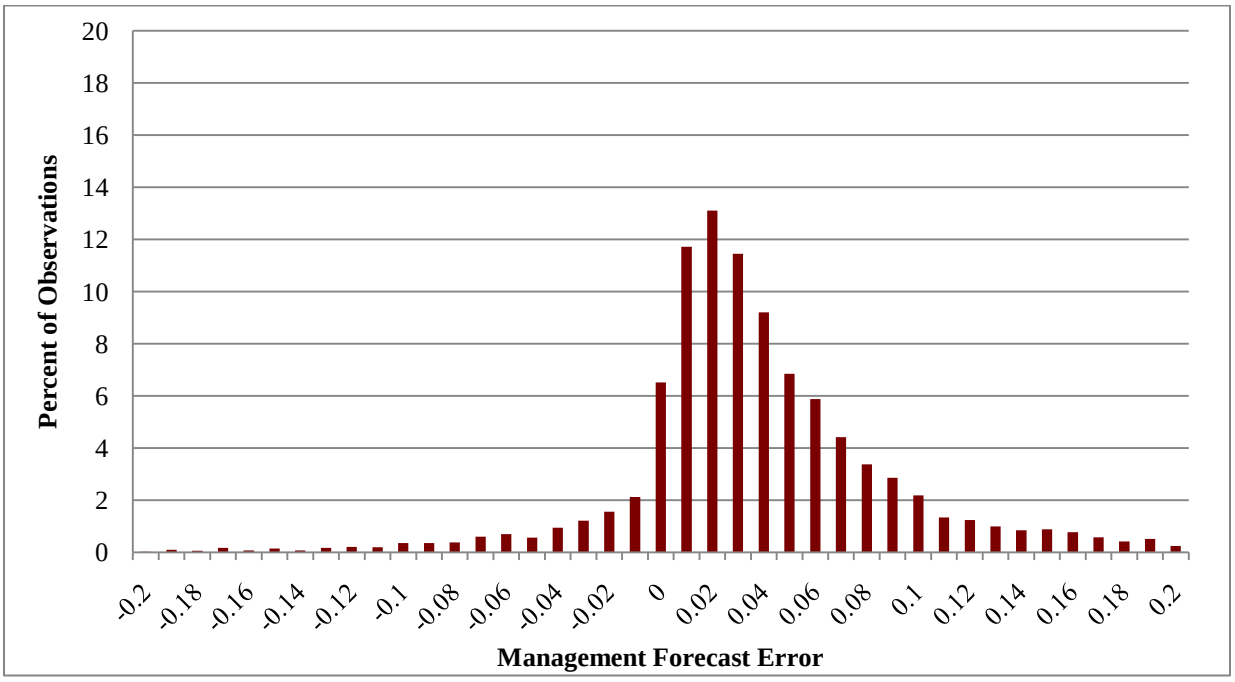


Table 1. Description of Sample-Firm Guidance Behavior

This table reports on the quarterly guidance behavior of sample firms. Sample firms must have data on COMPUSTAT and I/B/E/S and be covered by at least three analysts. Q1 through Q4 are fiscal quarters. Guidance horizon is the number of days between the last quarterly guidance issued by the firm and the fiscal quarter end.

Panel A: Guidance Observations and Attributes

	Number of Sample Firm-Quarters		% of Sample Observations with Guidance		% of Guidance Observations with Point or Range Guidance		Average Guidance Horizon (Days)	
Fiscal Year	Q1-Q3	Q4	Q1-Q3	Q4	Q1-Q3	Q4	Q1-Q3	Q4
2001	5,533	1,840	14.1%	11.8%	70.5%	90.4%	40	49
2002	5,661	1,859	16.0%	22.4%	93.3%	94.7%	43	50
2003	5,406	1,801	28.1%	30.5%	96.1%	96.4%	51	58
2004	5,383	1,785	33.8%	32.3%	96.0%	96.5%	52	57
2005	5,834	1,945	30.0%	29.4%	98.2%	96.1%	52	57
2006	6,118	2,016	29.0%	29.3%	97.0%	98.1%	54	59
2007	6,433	2,140	24.5%	26.2%	98.2%	99.3%	54	59
2008	6,759	2,235	22.1%	22.8%	98.2%	97.6%	55	56
Total	47,127	15,621	24.7%	25.6%	95.1%	96.7%	50	56

Panel B: Guidance Pattern

% firm-years with no quarterly guidance:	62.8%
% of firm-years with guidance in exactly one quarter:	9.8%
% of firm-years with guidance in exactly two quarters:	6.4%
% of firm-years with guidance in exactly three quarters:	6.8%
% of firm-years with guidance in exactly four quarters:	14.2%
% of firm-years with at least one instance of guidance in $Q1_t$-$Q3_t$ conditional on no guidance in $Q4_t$:	15.6%
% of firm-years with at least one instance of guidance in $Q1_t$-$Q3_t$ conditional on guidance in $Q4_t$:	86.3%
% of firm-years with guidance in $Q4_{t-1}$ guidance conditional on guidance in $Q4_t$:	63.8%

Table 2. Descriptive Statistics for Time-Series Modified Jones Model Estimation

This table reports descriptive statistics for the estimation of the time-series modified Jones model. The time-series model is estimated for each firm-year on up to 20 years of prior data, but is limited to observations where there are at least 8 years of prior data to estimate the coefficients.

	N	Mean	StDev	1Q	Median	3Q	Predicted Sign
INTERCEPT (α_0)	5,518	-0.053	0.195	-0.124	-0.034	0.038	-
1/ASSETS Coefficient (α_1)	5,518	33.31	965.56	-6.263	0.536	9.359	-
ΔREV - ΔAR Coefficient (α_2)	5,518	0.059	0.408	-0.031	0.056	0.164	67.4%
GPPE Coefficient (α_3)	5,518	-0.043	0.860	-0.241	-0.053	0.119	59.6%
ΔCFO Coefficient (α_4)	5,518	-0.430	0.447	-0.630	-0.476	-0.270	89.8%
Observations Per Regression	5,518	14	3	11	14	17	-
R^2	5,518	0.64	0.22	0.48	0.67	0.81	-

Table 3. Descriptive Statistics for the Abnormal Accruals Test

This table reports descriptive statistics for firm-year observations used in the abnormal accruals test. In Panel B, the mean t-statistics are from two-sample t-tests and median Z-statistics are from a Wilcoxon two-sample tests. Significance at the 10%, 5%, and 1% level are denoted *, **, and ***. In Panel C, correlations above 0.5 are highlighted and correlations significant at the 5% level are in bold. Variable definitions appear in Appendix 1. All continuous variables are Winsorized at the 1% and 99% level.

Panel A: Descriptive Statistics

	N	Mean	StDev	1Q	Median	3Q
ABACC	5,518	-0.006	0.097	-0.037	0.002	0.036
GUIDING	5,518	0.311	0.463	0.000	0.000	1.000
MBAF	5,518	0.135	0.342	0.000	0.000	0.000
MBAF2+	5,518	0.101	0.302	0.000	0.000	0.000
MBMF	5,518	0.031	0.174	0.000	0.000	0.000
MBMF2+	5,518	0.016	0.127	0.000	0.000	0.000
$ANALYSTS_{t-1}$	5,518	2.217	0.565	1.792	2.197	2.639
NOA_{t-1}	5,518	0.958	1.266	0.365	0.633	1.101
$RTNVOL_{t-1}$	5,518	0.025	0.011	0.018	0.023	0.030
$SIZE_{t-1}$	5,518	7.403	1.589	6.263	7.243	8.367
$ALTMANZ_{t-1}$	5,518	5.112	5.208	2.344	3.756	6.079
$FINNEED_{t-1}$	5,518	0.028	0.164	0.000	0.000	0.000
MTB_{t-1}	5,518	3.368	3.996	1.715	2.567	3.939
ROA_{t-1}	5,518	0.033	0.126	0.016	0.054	0.093
$SALESGR_{t-1}$	5,518	0.159	0.327	0.022	0.107	0.217

Panel B: Comparison of Guiding and Non-Guiding Firms

	Regularly Guiding Firms (N=1,715)		Non-Guiding Firms (N=3,803)		Between Sample Tests	
	Mean	Median	Mean	Median	Mean	Median
ABACC	-0.006	0.002	-0.007	0.001	0.37	0.01
MBAF	0.163	0.000	0.123	0.000	3.82***	3.98***
MBAF2+	0.142	0.000	0.083	0.000	6.14***	6.68***
MBMF	0.100	0.000	0.000	0.000	13.82***	19.84***
MBMF2+	0.053	0.000	0.000	0.000	9.80***	14.32***
$ANALYSTS_{t-1}$	2.382	2.398	2.143	2.079	15.08***	14.82***
NOA_{t-1}	0.724	0.575	1.063	0.662	-11.98***	-7.95***
$RTNVOL_{t-1}$	0.023	0.022	0.026	0.024	-10.37***	-9.07***
$SIZE_{t-1}$	7.672	7.559	7.282	7.106	8.70***	9.33***
$ALTMANZ_{t-1}$	5.467	4.207	4.952	3.518	3.62***	9.40***
$FINNEED_{t-1}$	0.004	0.000	0.038	0.000	-9.87***	-7.18***
MTB_{t-1}	3.388	2.646	3.359	2.528	-0.28	2.25**
ROA_{t-1}	0.058	0.064	0.022	0.049	12.36***	8.91***
$SALESGR_{t-1}$	0.135	0.112	0.169	0.105	-4.42***	0.89

Panel C: Correlation Matrix (Spearman\Pearson)

	ABACC	GUIDING	MBAF	MBAF2+	MBMF	MBMF2+
ABACC		0.005	0.022	0.019	0.011	0.018
GUIDING	-0.002		**0.054**	**0.090**	**0.267**	**0.193**
MBAF	0.013	**0.054**		**-0.133**	**0.106**	-0.001
MBAF2+	0.012	**0.090**	**-0.133**		**0.061**	**0.239**
MBMF	0.000	**0.267**	**0.106**	**0.061**		-0.023
MBMF2+	0.015	**0.193**	-0.001	**0.239**	-0.023	
$ANALYSTS_{t-1}$	0.008	**0.200**	**0.045**	**0.082**	**0.078**	**0.083**
NOA_{t-1}	**-0.058**	**-0.107**	**-0.030**	-0.023	**-0.039**	0.001
$RTNVOL_{t-1}$	-0.038	**-0.122**	-0.020	0.013	-0.022	-0.013
$SIZE_{t-1}$	0.027	**0.126**	0.020	**0.047**	**0.034**	**0.049**
$ALTMANZ_{t-1}$	-0.023	**0.127**	**0.061**	**0.113**	**0.050**	**0.053**
$FINNEED_{t-1}$	0.032	**-0.097**	-0.018	**-0.038**	-0.024	-0.022
MTB_{t-1}	**0.062**	**0.030**	**0.037**	**0.082**	0.020	**0.047**
ROA_{t-1}	-0.015	**0.120**	**0.057**	**0.069**	**0.037**	**0.039**
$SALESGR_{t-1}$	0.024	0.012	-0.007	-0.003	0.012	0.025

	$ANALYSTS_{t-1}$	NOA_{t-1}	$RTNVOL_{t-1}$	$SIZE_{t-1}$	$ALTMANZ_{t-1}$	$FINNEED_{t-1}$	MTB_{t-1}	ROA_{t-1}	$SALESGR_{t-1}$
ABACC	0.011	**-0.060**	**-0.027**	**0.039**	-0.015	**0.005**	**0.024**	-0.028	-0.013
GUIDING	**0.195**	**-0.124**	**-0.127**	**0.114**	**0.046**	**-0.097**	**0.003**	**0.134**	-0.048
MBAF	**0.045**	**-0.036**	-0.014	0.022	**0.042**	-0.018	**0.031**	**0.037**	-0.014
MBAF2+	**0.082**	-0.050	0.026	**0.048**	**0.082**	**-0.038**	**0.032**	**0.058**	-0.030
MBMF	**0.079**	**-0.035**	-0.024	**0.028**	**0.028**	-0.024	0.006	**0.037**	-0.014
MBMF2+	**0.083**	-0.018	-0.017	**0.051**	**0.038**	-0.022	**0.022**	**0.036**	0.008
$ANALYSTS_{t-1}$		**0.078**	**-0.217**	**0.689**	**0.023**	**-0.061**	**0.100**	**0.130**	**0.028**
NOA_{t-1}	**0.097**		**0.019**	**0.035**	**-0.134**	**0.207**	**-0.074**	**-0.096**	**0.260**
$RTNVOL_{t-1}$	**-0.271**	**-0.057**		**-0.476**	0.027	**0.186**	**-0.024**	**-0.409**	**0.074**
$SIZE_{t-1}$	**0.687**	**0.093**	**-0.560**		**0.042**	**-0.145**	**0.163**	**0.323**	**-0.001**
$ALTMANZ_{t-1}$	**0.035**	**-0.286**	-0.026	**0.064**		**-0.139**	**0.197**	**0.311**	**0.049**
$FINNEED_{t-1}$	**-0.062**	**0.087**	**0.154**	**-0.146**	**-0.187**		**0.016**	**-0.431**	0.079
MTB_{t-1}	**0.197**	**-0.174**	**-0.124**	**0.314**	**0.415**	**-0.028**		**0.077**	**0.143**
ROA_{t-1}	**0.172**	**-0.155**	**-0.329**	**0.349**	**0.578**	**-0.232**	**0.433**		**-0.061**
$SALESGR_{t-1}$	**0.073**	**0.202**	**0.028**	**0.052**	**0.166**	-0.020	**0.231**	**0.221**	

Table 4. Model of Abnormal Accrual Behavior

This table reports the results of tests of using abnormal accruals to achieve earnings benchmarks. Panel A shows the results of an ordinary-least-squares (OLS) regression with abnormal accruals (ABACC) as the dependent variable. Firm-clustered t-statistics are in parentheses. Panel B shows statistics for expected benchmark-beating accruals. The sample is comprised of 5,518 firm-years, 1,715 of which issue regular quarterly earnings guidance (GUIDING=1) and 3,803 of which do not issue quarterly guidance (GUIDING = 0). Significance is one-tailed when the predicted direction is unambiguous, and two-tailed otherwise. Significance at the 10%, 5%, and 1% level are denoted *, **, and ***. Variable definitions appear in Appendix 1. All continuous variables are Winsorized at the 1% and 99% level.

Panel A: OLS Regression Results

Parameter	Prediction	Estimate
GUIDING (B_1)	?	-0.001
MBAF (B_2)	+	0.005
MBAF2+ (B_3)	+	0.012**
MBMF (B_4)	+	0.007
MBMF2+ (B_5)	+	0.014*
GUIDING*MBAF (B_6)	+/-	0.003
GUIDING*MBAF2+ (B_7)	+/-	-0.017**
$ANALYSTS_{t-1}$ (B_8)	+/-	-0.007*
NOA_{t-1} (B_9)	-	-0.005**
$RTNVOL_{t-1}$ (B_{10})	+	0.051
$SIZE_{t-1}$ (B_{11})	-	0.005***
$ALTMANZ_{t-1}$ (B_{12})	-	0.000
$FINNEED_{t-1}$ (B_{13})	+	0.001
MTB_{t-1} (B_{14})	+	0.000
ROA_{t-1} (B_{15})	+/-	-0.055**
$SALESGR_{t-1}$ (B_{16})	+/-	-0.004
Industry Fixed Effects		Included
Year Fixed Effects		Included
N		5,518
Clusters		1,804
R^2		0.05

Panel B: Additional Parameter Tests

Parameter	Estimate	P-Value
2+ Meet or Beat Effects		
$B_3 + B_7$	-0.050	0.45
$B_3 - B_5$	0.002	0.88
Single Meet or Beat Effects		
$B_2 + B_6$	0.008	0.15
$B_2 - B_4$	0.005	0.80

Table 5. Matched Sample Tests of Accounting Irregularities

This table reports the results of tests using a matched sample of firms with and without accounting irregularities. Panel A shows descriptive statistics for the sample by presence of an irregularity. The mean t-statistics are from a two-sample t-test and the median Z-statistics are from a Wilcoxon two-sample test. Panel B shows the results of a pair-wise differences logistic model where the dependent variable is set to one for all observations. Significance is one-tailed when the predicted direction is unambiguous, and two-tailed otherwise. Significance at the 10%, 5%, and 1% level are denoted *, **, and ***. (There are no significant coefficients in Panel B.) Variable definitions appear in Appendix 1. All continuous variables are Winsorized at the 1% and 99% level.

Panel A: Comparison of Matched Irregularity and Non-Irregularity Firms

	Irregularity Firms (N=132)		Non-Irregularity Firms (N=132)		Between Sample Tests	
	Mean	Median	Mean	Median	Mean	Median
GUIDECOUNT	0.402	0.000	0.417	0.000	-0.13	0.27
$ANALYSTS_{t-1}$	1.838	1.792	1.928	1.946	-0.98	-0.9
NOA_{t-1}	1.711	0.630	0.964	0.576	1.73*	1.27
$RTNVOL_{t-1}$	0.042	0.040	0.042	0.040	-0.14	-0.08
$SIZE_{t-1}$	6.540	6.294	6.550	6.435	-0.04	-0.06
$ALTMANZ_{t-1}$	6.540	3.553	7.641	4.964	-1.13	-2.18**
$FINNEED_{t-1}$	0.045	0.000	0.038	0.000	0.31	0.31
MTB_{t-1}	4.386	2.690	4.209	2.805	-0.24	-0.06
ROA_{t-1}	-0.031	0.030	-0.017	0.047	-0.45	-1.48
$CHROA_{t-1}$	-0.009	-0.002	-0.011	-0.007	0.07	0.17
$SALESGR_{t-1}$	0.455	0.196	0.268	0.157	2.02**	0.67

Panel B: Paired Differences Logistic Regression

Parameter	**Prediction**	**Estimate**
DIFF_GUIDECOUNT	+/-	-0.024
$DIFF\_ANALYSTS_{t-1}$	+/-	-0.403
$DIFF\_NOA_{t-1}$	+	0.137
$DIFF\_RTNVOL_{t-1}$	+	-4.100
$DIFF\_SIZE_{t-1}$	-	0.023
$DIFF\_ALTMANZ_{t-1}$	-	-0.034
$DIFF\_FINNEED_{t-1}$	+	0.281
$DIFF\_MTB_{t-1}$	+	0.038
$DIFF\_ROA_{t-1}$	+/-	0.078
$DIFF\_CHROA_{t-1}$	-	-0.008
$DIFF\_SALESGR_{t-1}$	+/-	0.528
N		132