What Guides the Guidance?
An Empirical Examination of the Dynamic Disclosure Theory

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Abstract:
I develop and explore a new dimension of earnings guidance – guidance consistency. Contrary to the conventional wisdom that managers make an independent guidance decision each period, I find empirical support for the dynamic disclosure theory, which argues that managers consider past and future guidance when they decide on current guidance. Once I account for past guidance in a logistic model, several known guidance determinants are no longer significant in explaining management guidance decisions. In contrast, past guidance remains significant both statistically and economically across various specifications, suggesting that management guidance decisions are largely predetermined. Moreover, the guidance consistency measure is more robust than the conventional frequency-based "habitual" variable in explaining future guidance. The results still hold in a Heckman selection model and after propensity score matching, mitigating the concern that guidance consistency is merely driven by firms operating in stable environments.

Keywords: Earnings guidance, Management earnings forecast, Voluntary disclosure, Dynamic disclosure theory, Guidance patterns, Guidance consistency

Data Availability: Data used in this study are available from public sources indicated in the text.

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1. Introduction

Earnings guidance is a firm's disclosure (usually in the form of a press release or a conference call) that contains information about expected future earnings.[1] It is only mandated prior to insider trading under the Securities and Exchange Commission (SEC) Rule 10b5 and is voluntary otherwise (Li et al., 2012). Earnings guidance serves as a major channel for managers to convey financial outlooks to investors and has significant impacts on capital markets (Pownall et al., 1993; Baginski and Hassell, 1990; Coller and Yohn, 1997). About 55% of the financial-information-driven stock price variations during 1994~2007 are attributed to earnings guidance (Ball and Shivakumar, 2008; Beyer et al., 2010). Moreover, the prevalence of guidance increased dramatically after the passage of Regulation Fair Disclosure (Reg FD) in 2000 (Wang, 2007).

Despite the vast existing literature on earnings guidance, two main limitations hamper a comprehensive understanding of this common practice. First, as Hirst et al. (2008) suggest, most prior studies ignore the iterative nature of earnings guidance and assume that managers make an independent guidance decision each quarter, hence implicitly assuming a static or single-period disclosure theory. Second, most prior studies focus on guidance levels (e.g. guidance frequency), leaving the time-series variation of guidance practice (e.g. guidance changes) largely unexplored. This study fills these voids by examining the *variability* in earnings guidance over consecutive years and thereby empirically evaluates the dynamic or multi-period disclosure theory.

In contrast to the static theory, the dynamic theory assumes that managers consider both past and future guidance when deciding on current guidance. This dynamic view of guidance is evidenced in recent surveys. For example, Graham et al. (2005, p. 4) find that managers "*work to maintain predictability in financial disclosure… [and] try to avoid setting disclosure precedents that will be difficult to maintain*," similar to the notion that managers try to maintain consistent

[1] I use the terms "earnings guidance" and "management earnings forecasts" interchangeably throughout this paper.

dividend practice (Brav et al., 2005). The dynamic view also has been theorized by Einhorn and Ziv (2008). They suggest that previous regular guidance reveals to investors that managers are informed about future earnings; hence investors anticipate guidance to continue in future periods. Guidance omissions from such firms are more negatively interpreted by investors than omissions from firms with no previous regular guidance. Moreover, current guidance sets up a precedent that investors expect to continue in the future, especially if the firm has adhered to its guidance practice in the past. Therefore, under the dynamic disclosure theory, firms with past regular guidance are less likely to either decrease or to increase guidance subsequently.[2]

While prior studies rely on guidance frequency to classify "regular" guiders, I develop a new measure based on the time-series patterns in guidance. In particular, I use a 4×1 vector (4×2 matrix) of "guide" dummies for each firm-year to separately (jointly) examine quarterly or (and) annual guidance patterns, as illustrated in Figure 1 (Figure 2). The guidance pattern for a given firm-year is coded as consistent (inconsistent) if it is identical to (differs from) the pattern in the preceding year.[3] Using a panel of 13,048 firm-years (1,864 firms over 2001~2007, post-Reg FD), I find that 66% of the guidance patterns are consistent (27% consistent non-guidance and 39% consistent guidance). Moreover, these patterns last for an average of 4 years and 69% persist until the end of my sample period. The number of consistent guiders increases over time from 188 to 560 (from 157 to 563) based on the quarterly (annual) guidance patterns.

To examine the dynamic disclosure theory, I include both *past* guidance consistency and *past* guidance frequency in a logistic regression of *current* guidance consistency, and control for

[2] In this study, guidance decreases include the extreme case of "guidance stopping;" guidance increases include the special case of "guidance initiation." I use the words "drop", "omit", and "suspend" guidance interchangeably, in the case where a firm decreases its guidance frequency relative to the preceding year.

[3] Although both "consistent guidance" and "consistent non-guidance" are coded as consistent, I use these two terms separately to distinguish these two cases because: (a) consistent non-guiders do not face the choice to drop guidance as consistent guiders do; and (b) I also examine the guidance timing and format, which does not apply to consistent non-guiders. Therefore, consistent non-guiders are excluded in these two analyses.

various guidance determinants. Using last year's guidance pattern as the benchmark, I separately examine firms' decisions to either increase or decrease guidance this year. In both cases, I find that compared with inconsistent guiders, consistent guiders (consistent non-guiders) are more likely to maintain their existing guidance (non-guidance) practice, and are 30 (20) percent less likely to decrease (increase) guidance frequency.[4] Consistent with the dynamic disclosure theory (Einhorn and Ziv, 2008), including the past guidance consistency and frequency variables more than doubles (triples) the pseudo-R^2 of the logistic regression that explains subsequent guidance decreases (increases), and their marginal effects exceed other guidance determinants in economic magnitude. This finding is potentially subject to a selection bias – a firm that issued consistent guidance in the past is more likely to be operating in a stable environment, and hence is more likely to continue its guidance practice even if its manager is making an independent guidance decision each quarter, which is also consistent with the static theory. To distinguish the dynamic theory from the static theory, I use three approaches: (a) two-stage selection models that explicitly model the decision of past guidance consistency; (b) propensity scores to match firms that are equally likely to issue consistent guidance based on all other guidance determinants except past guidance consistency; and (c) measuring guidance determinants as changes from last year to this year, to examine whether it is the stability of the guidance determinants that drives guidance consistency. Across all of these tests, past guidance consistency remains significant in explaining subsequent guidance decisions but the changes in guidance determinants are largely insignificant. Hence the results support the dynamic disclosure theory over the static theory.

Feng and Koch (2010) document that firms are more likely to drop guidance if their past guidance failed to avoid earnings disappointments (so-called "once bitten twice shy" strategy).

[4] Note that the classification of inconsistent guiders, consistent guiders, and consistent non-guiders is based on the guidance patterns in the *past* two years. Results are similar if I use the *past* three or four years' guidance patterns.

My evidence shows that this result is only significant for inconsistent guiders, whereas consistent guiders drop guidance primarily due to lack of information endowment, proxied by information uncertainty (Chen et al., 2011), consistent with the dynamic disclosure theory –consistent guiders are more reluctant to drop guidance than inconsistent guiders. Although prior studies often use guidance frequency to classify firms as habitual and sporadic guiders, the result based on that classification is inconsistent with the dynamic theory, as the "once bitten twice shy" variables are significant only for habitual guiders. Moreover, after excluding firms issuing guidance every quarter, past guidance frequency is positively associated with future guidance omissions, contradicting conventional wisdom. In contrast, past guidance consistency is significant in the predicted direction across various specifications, hence more robust than the conventional frequency-based "habitual" variable in terms of capturing routine guiders.

Finally, I find that compared with inconsistent guiders, consistent guiders are more likely to: (a) issue guidance earlier during the quarter; (b) bundle guidance with the previous quarter's earnings announcement; (c) issue guidance even when analyst consensus forecasts are already aligned with managers' own estimates; and (d) maintain consistency in their guidance timing or specificity (e.g. point, range, etc.). These results are consistent with the findings of Graham et al. (2005) that managers try to maintain consistency in financial disclosure.

This paper contributes to the voluntary disclosure literature primarily in two ways. First, I provide empirical evidence for the dynamic disclosure theory in the setting of earnings guidance (Einhorn and Ziv, 2008). My results suggest that managers are unlikely to make an independent guidance decision every quarter, but rather they tend to follow their previous practice, especially if the firm has already established a consistent (but not necessarily frequent) guidance history. This is consistent with the survey results in Graham et al. (2005) that managers try to maintain

"predictability" in financial disclosure. The persistent guidance patterns and consistent guidance timing and format further suggest that consistent guiders are likely making *ex ante* decisions on their guidance practice instead of making *ex post* guidance decisions every quarter, a distinction noted in prior theories (Leuz and Verrecchia, 2000; Core, 2001), but lacking empirical evidence.

Second, this paper makes a methodological contribution. Prior literature mainly examines guidance *levels* using pooled regressions of either a "guide" dummy or guidance frequency, thus implicitly assuming the decision benchmark (i.e. the default choice) is non-guidance for all firms. However, the dynamic disclosure theory and the survey evidence suggest that managers tend to follow their previous practice. Based on this notion, I use a firm's past guidance as its benchmark for current guidance and examine the *changes* in guidance patterns by developing a new measure – guidance consistency. This new research design allows me to study guidance variability from a time-series perspective – a dimension of guidance that is overlooked in prior literature. Moreover, my results suggest that compared with the conventional frequency-based "habitual" variable, past guidance consistency is more robust in explaining future guidance in directions predicted by the dynamic disclosure theory, and is also robust to procedures that account for the endogeneity of past guidance consistency. Overall, both the statistical power and the economic magnitude of past guidance are paramount in the multiple logistic regressions; hence omitting guidance history variables in analyzing management guidance decisions is likely to result in spurious associations and misleading interpretations.[5]

The next section provides the institutional background on earnings guidance practice, reviews related literature, and develops hypotheses. Section 3 describes my sample and the guidance patterns. I present and discuss the empirical results in Section 4. Section 5 concludes.

[5] In particular, without including guidance history variables, I find that analyst following, the regulated industry dummy, and equity beta are all significant in explaining management guidance decisions in expected directions. However, once I account for guidance history, these determinants become statistically insignificant.

2. Institutional background, literature review, and hypothesis development

2.1 The evolution of earnings guidance practice and a review of related literature

The practice of issuing earnings guidance took root in the 1970s, when managers began privately communicating their forecasts to large investors. This practice grew during the stock-market boom in the 1990s, especially after the passage of the Private Securities Litigation Reform Act (PSLRA, 1995) that protects managers from liabilities of their forward-looking statements (McKinsey & Company, 2006). As analysts gaining access to material non-public information through extensive private conversations with executives, the SEC passed Reg FD in 2000 to prohibit private and selective disclosure of material information by public companies.[6] Because investors consider analyst forecasts as an important earnings target (Brown and Caylor, 2005), there is a severe negative market reaction if reported earnings per share (EPS) falls short even by a penny (Skinner and Sloan, 2002). Hence many firms issue public guidance to adjust market expectations before earnings announcements (Fuller and Jensen, 2002; Matsumoto, 2002).

According to the National Investor Relations Institute (NIRI) surveys over 2003~2009, the percentage of firms providing earnings guidance decreased from 77% to 60%. Among the guiders, however, the surveys find an opposite trend in quarterly guidance (75% drops to 30%) than in annual guidance (16% rises to 81%), consistent with practitioners' call to replace the practice of quarterly guidance with annual guidance (CFA Institute, 2006; Deloitte, 2009).[7] A major criticism against quarterly guidance is that it induces managers to fixate on the short term earnings numbers instead of creating firms' long term value (Fuller and Jensen, 2002; 2010).

[6] See Beyer et al. (2010) Section 4.2.1 for a literature review on Reg FD.

[7] Using the First Call data, Anilowski et al. (2007, Table 2) find much lower prevalence but an increasing trend in earnings guidance (from 1.6% in 1994 to 27.2% in 2003), accounting for an increasing proportion of the total market cap in their sample (from 0.05% in 1994 to 46.4% in 2003). They also find an increasing trend in annual guidance over time and a decreasing trend in quarterly guidance after the passage of Reg FD.

However, once guidance is initiated, managers are under pressure from various market participants to maintain their guidance practice. Analysts and investors generally prefer firms with more guidance (Lang and Lundholm, 1993; Bushee and Noe, 2000), but holding constant the guidance level, most analysts and investors prefer *consistent* guidance practice because they can anticipate future guidance with more certainty (CFA Institute, 2006). There are negative price reactions to firms' guidance renouncements (Chen et al. 2011). Analysts would become more concerned with firms' outlooks if managers suspend guidance (MWW Group, 2009). Managers are more reluctant to suspend guidance if their peers continue to provide guidance (Houston et al. 2010). Confronted with these pressures, managers either endeavor to maintain earnings guidance or to avoid setting guidance precedents that are difficult to maintain (Graham et al., 2005). The desirability of guidance consistency and continuation is similar to the inflexible nature of dividend policies in many ways (Brav et al., 2005; DeAngelo et al., 2009).

Recent studies have documented dramatic changes in earnings guidance practice after Reg FD. For example, Rogers et al. (2009) find a significant decrease (increase) in the number of sporadic (habitual) guiders, defined as firms providing guidance for two or fewer (three or more) quarters per year. Rogers and Van Buskirk (2011) document that the percentage of guidance bundled with earnings announcements increased from 6.8% in 1995 to 74.8% in 2007, with a sharp increase after 2001. Berger (2011) attributes this trend to the difficulties in effectively regulating earnings guidance and earnings announcements independently; hence some firms likely formalize guidance as part of their standard disclosure practice. Besides, the numbers of stand-alone guidance and preannouncements (i.e. forecasts issued after fiscal quarter ends but before earnings announcements) declined substantially after 2001 (Rogers and Van Buskirk, 2011), indicating a distinct era for earnings guidance in the post-Reg FD period.

Given its extensive use and significant capital market impact, earnings guidance has been an important topic in accounting research.[8] As machine-readable data (e.g. First Call) became available in the 1990s, the empirical literature on earnings guidance has proliferated. Empiricists often use earnings guidance as a setting to test theories of voluntary disclosure in general. Hirst et al. (2008) point out a major limitation in this literature – most prior studies ignore the iterative nature of earnings guidance and implicitly assume that managers make an independent guidance decision every period. In terms of research designs, prior studies typically use a "guide" dummy variable or the guidance frequency variable as the dependent variable and pool firm-quarters or firm-years in a regression on guidance determinants. Both designs are *level* specifications that implicitly assume the benchmark of the guidance decision (i.e. the default choice) is "non-guidance" for all firms and for all periods, hence ignoring guidance history. In this study, I examine the *changes* in firms' guidance practice because the dynamic theory (explained below) implies that the benchmark for managers' guidance decisions should be their previous guidance; hence managers are effectively deciding on the *changes* of guidance rather than on the *levels*.[9]

2.2 Hypothesis development under the dynamic disclosure theory

Under a single-period setting with no disclosure cost, all private information is disclosed, regardless of the underlying news, as the "unraveling theory" predicts (Grossman and Hart, 1980; Milgrom, 1981). Dye (1985), as well as Jung and Kwon (1988), suggests that when investors are uncertain about managers' information endowment, informed managers can thus withhold bad news by pooling with uninformed managers, i.e. pretend to be uninformed. Given the iterative

[8] Excellent surveys of empirical research on management earnings forecasts include (but are not limited to): Beyer et al. (2010), Hirst et al. (2008), Healy and Palepu (2001), Core (2001), King et al. (1990), and Cameron (1986).

[9] The change specification also captures the information ignored in the level specifications (e.g. guidance frequency). For example, we may observe three firms giving guidance only for one quarter this year, but in the last year, Firm A provided no guidance; Firm B provided guidance only once a year but for the same fiscal quarter; Firm C provided guidance every quarter. From a change perspective, Firm A is initiating guidance; Firm B is maintaining consistent guidance practice; Firm C is decreasing guidance; although they all have the same guidance level in the current year.

nature of earnings guidance, investors perceive the likelihood of informed managers to be positively correlated over time, e.g. due to managers' familiarity with the operations. Hence, investors form and update their beliefs about managers' information endowment based on guidance history (Einhorn and Ziv, 2008). In particular, regular past guidance (non-guidance) reveals to investors that the manager likely (unlikely) possesses private information about future earnings; thus investors would rationally anticipate continued guidance (non-guidance) in future periods. Similarly, current guidance signals that managers are informed and sets a precedent that the market expects to continue (Graham et al., 2005). In summary, the dynamic disclosure theory suggests that managers consider both past and future when making current guidance decisions.

However, the dynamic theory does not clearly define "regular guidance," which reveals managers' information endowment to the market. I empirically characterize guidance regularity with both guidance consistency and guidance frequency. The frequency measure is based on the notion that investors perceive frequent guiders as better informed of future earnings.[10] Previous studies typically use past guidance frequency, either directly or transformed into a "habitual" dummy variable, to summarize guidance history (e.g. Wasley and Wu, 2006; Rogers et al., 2009; Chen et al., 2011). A drawback of the frequency measure is that it treats all fiscal quarters in a year as the same and hence ignores the time-series patterns in guidance.

I introduce a new measure of guidance regularity – guidance consistency, elaborated in Section 3. The consistency measure is based on the notion that if past guidance exhibits a consistent pattern (e.g. managers always issue guidance in the fourth quarter), then investors would infer that managers are informed of future earnings for *certain* quarters of the year. If managers omit guidance in a fiscal quarter that they previously provided guidance consistently,

[10] Several prior studies interpret a high frequency of voluntary disclosure as a proxy for firms following an *ex ante* policy of disclosure, especially if the voluntary disclosure is also bundled with earnings announcements (e.g. Brown et al., 2004). I also provide evidence on the guidance bundling decisions and the results are consistent with this view.

investors will negatively interpret the omission as managers withholding bad news rather than managers being uninformed. Investors are less likely to negatively interpret non-guidance in the quarters with no guidance precedent. However, once managers initiate guidance in these quarters, investors will rationally update their beliefs of managers' information endowment and anticipate guidance to continue in these quarters in the following years.

As both consistency and frequency of past guidance can reveal managers' information endowment to investors, it is an empirical question as to which measure better explains managers' subsequent guidance decisions. I develop and test my hypotheses focusing on the new measure – guidance consistency, and control for guidance frequency in my tests. Based on the guidance patterns over the *past* two years, I classify firms as "inconsistent guiders," "consistent guiders," and "consistent non-guiders," and examine their *current* guidance decisions.

H1: *Ceteris paribus*, compared with inconsistent guiders (classified based on *past* guidance),

(a) Consistent guiders are less likely to decrease guidance in the *current* period; and

(b) Both consistent non-guiders and consistent guiders (if not already guiding for all quarters) are less likely to increase guidance in the *current* period.

Prior research suggests that managers withhold guidance for two primary reasons: (a) managers are *unable* to accurately predict earnings due to insufficient private information (e.g. Chen et al., 2011); and (b) despite information endowment, managers are *unwilling* to provide guidance and tend to withhold bad news (e.g. Kothari et al., 2009; Houston et al., 2010). Under the dynamic disclosure theory, investors interpret guidance omissions by consistent guiders as more negative signals than by inconsistent guiders. Aware of this, consistent guiders are more reluctant to drop guidance and strive harder to maintain guidance consistency *unless* managers lack sufficient information, proxied by higher analyst forecast dispersion, stock return volatility,

and earnings volatility (Chen et al., 2011).[11] In contrast, because investors are less certain about inconsistent guiders' information endowment, inconsistent guiders are more likely to withhold guidance intentionally despite their information endowment (Dye, 1985). A prominent disclosure theory with the assumption of informed managers is the expectation alignment hypothesis (e.g. Ajinkya and Gift, 1984; King et al., 1990): managers use guidance to align market expectation with their private information, or to adjust market expectation to a level that managers consider attainable, so-called "expectation management" (Matsumoto, 2002). Based on this hypothesis, I conjecture that, compared with consistent guiders, inconsistent guiders are more likely to drop guidance because managers perceive the expectation management value of guidance to be small, proxied by the failure of past guidance to avoid earnings disappointments (Feng and Koch, 2010) and by the lack of analyst following (Lang and Lundholm, 1993).[12]

H2a: *Ceteris paribus*, the guidance omission decisions by *consistent* guiders are sensitive to information uncertainty (proxied by [increased] analyst forecast dispersion, [increased] stock return volatility, and [increased] earnings volatility) but *not* to expectation management (proxied by past earnings disappointments after giving guidance and by [decreased] analyst following).

H3a: *Ceteris paribus*, the guidance omission decisions by *inconsistent* guiders are sensitive to both information uncertainty *and* expectation management.

Similar predictions can be made on guidance increase decisions by consistent guiders and consistent non-guiders versus by inconsistent guiders (**H2b** and **H3b** respectively, omitted to

[11] By definition, the levels of the guidance determinants should explain managers' guidance decision variables. If managers take previous guidance as given and effectively decide on guidance changes (as in the dynamic theory), then the *levels* of these determinants should explain guidance changes. Alternatively, if managers make decisions on guidance levels each period (as in the static theory), then after taking first difference, the changes in guidance should be explained by the *changes* in guidance determinants (Plosser and Schwert, 1978). I empirically test both the level and change specifications. Hence my tests are joint tests of managers' decision variables and guidance determinants.

[12] Feng and Koch find that firms tend to drop guidance after past guidance failed to avoid earnings disappointments (so-called "once bitten twice shy" strategy). I expect such myopic behavior applies only to inconsistent guiders, but not to consistent guiders.

avoid repetition). However, Graham et al. (2005) find (also suggested by Einhorn and Ziv, 2008) that managers are generally reluctant to initiate guidance; therefore I expect the contrast in guidance increases by consistent non-guiders and consistent guiders versus by inconsistent guiders (H2b and H3b) to be less acute than the contrast in guidance decreases (H2a and H3a).

As the main purpose of this paper is to examine the dynamic disclosure theory, H1~H3 treat *past* guidance consistency as an independent variable and examine its effect on *current* guidance decisions. However, because firms make conscious choices on their past guidance, there is likely a selection bias – firms in stable environments are more likely to issue consistent guidance over time even if their managers make an independent guidance decision each period, which is also consistent with the static theory. To mitigate this concern, I use: (a) two-stage selection models, (b) propensity score matching techniques, and (c) measurement of guidance determinants also in changes besides levels. A robust result across these different specifications would help distinguish the dynamic disclosure theory from the static theory.

Finally, I conjecture that inconsistent guiders differ from both consistent guiders and consistent non-guiders in their timing of guidance decisions. Inconsistent guiders are likely to make guidance decisions after entering the current period and after observing the underlying news (i.e. *ex post* decisions), whereas both consistent guiders and consistent non-guiders are likely to make guidance decisions before entering the current period (i.e. *ex ante* decisions) (Leuz and Verrecchia, 2000; Core, 2001). Hence, compared with consistent guiders, inconsistent guiders are likely to issue guidance later in the quarter (because they wait to observe their private signals) and are more likely to alter guidance timing and format (e.g. point, range, etc.) over time.

H4: Compared with inconsistent guiders, consistent guiders are more likely to issue guidance earlier during the quarter and are less likely to change guidance timing and format over time.

3. Sample selection and descriptive statistics

3.1 Sample selection

I obtain earnings guidance data from the First Call, Company Issued Guidelines (CIG) file. Previous studies verify its relatively complete and consistent coverage (e.g. Feng and Koch, 2010). Moreover, my sample covers the post-Reg FD period (2001~2007) and comprises larger firms followed by more analysts, all of which suggest a more complete coverage by the CIG file (Chuk et al., 2009). Following Bhojraj et al. (2011), I require sample firms to exist in the Compustat/ CRSP merged file for the entire 7 years and to issue at least one earnings guidance during the sample period. These criteria result in a sample of 1,864 unique firms over 7 years, a total of 13,048 firm-year observations. Although this procedure induces survivorship bias, the balanced panel structure facilitates the interpretation of results because of a constant sample. Most of all, this procedure ensures that firms do not appear to provide inconsistent guidance because they were acquired or delisted in the middle of a fiscal year. The final sample size is larger than or comparable to those in recent studies (e.g. Houston et al., 2010; Chen et al., 2011).

I follow prior literature to construct the earnings guidance sample (see Table 1). Starting with all EPS forecasts in "USD" issued by the sample firms during the sample period, I exclude forecasts issued within or after the last 21 days of the fiscal quarters, following Li et al. (2012). These late forecasts are usually intended to preempt bad news rather than to provide guidance for the forthcoming earnings (Skinner, 1994, 1997), and contain much less uncertainty than forecasts issued earlier during the quarter. Following Gong et al. (2011), I exclude all guidance issued in prior quarters (or in prior years for annual guidance) as these long-term guidance contain more earnings uncertainty, and hence are incomparable to guidance issued during the current period. Finally, I exclude guidance revisions in the same quarter.

3.2 Describing guidance patterns and measuring guidance consistency

I measure guidance patterns based on fiscal years for two reasons. First, it accounts for the seasonal patterns caused by the integral accounting method (the special accounting treatment in the last fiscal quarter). Second, measuring at the annual level preserves the guidance patterns, which are otherwise unobservable at the quarterly level or using guidance frequency (see fn. 9). To examine guidance changes, I compare two consecutive years to code my dependent variable $Consistent_{i,t}$ as one if firm *i* in year *t* provides guidance in the same pattern as in year *t-1*, and zero otherwise. As illustrated in Figure 1, consistent guidance patterns include both consistent non-guidance and consistent partial and full guidance; inconsistent guidance patterns include guidance increases, decreases, and switching order only. Following prior literature, I separately examine quarterly guidance and annual guidance, except in the fourth quarter, where a quarterly guidance is also considered as an annual guidance for the current year and vice versa.

To provide a more comprehensive analysis of earnings guidance, I jointly examine both annual and quarterly guidance. As illustrated in Figure 2, $ConsistentJoint_{i,t}$ is coded as one if the joint pattern of quarterly and annual guidance in year *t* is identical to the pattern in year *t-1*, and zero otherwise. Thus *ConsistentJoint=1* if and only if both *ConsistentA=1* and *ConsistentQ=1*.

Figure 3 Panel A (B) describes the annual (quarterly) guidance patterns. Over 2002~2007, the number of consistent patterns increases, mainly driven by consistent guidance rather than by consistent non-guidance. The trend towards consistent guidance practice provides preliminary evidence for the dynamic disclosure theory and demonstrates the importance of using a change specification to study guidance decisions.[13] The joint patterns in Panel C suggest consistent annual guidance has become more common (from 32 to 199) than consistent quarterly guidance

[13] I repeat my analysis using firms in the CIG file that do not survive through the entire 2001-2007 period, and I find a similar trend towards consistent guidance (untabulated). Because non-surviving firms are less stable than surviving firms, this result mitigates the concern that my results are solely driven by stable firms.

(from 23 to 79) over the period from 2002 to 2007, with increasing numbers of firms consistently using both (from 26 to 141). Therefore, it is important to also include annual guidance in a more comprehensive analysis of the earnings guidance practice in the post-Reg FD period.

Of all 13,048 firm-years (1,864 firms × 7 years), 66% of guidance patterns are consistent (27% consistent non-guiders and 39% consistent guiders). Untabulated firm-level analysis shows that 1,462 firms have consistent guidance patterns for at least 3 years (684 consistent guiders and 778 consistent non-guiders). Limited by the sample period of 7 years, these patterns last for an average of 4 years, suggesting that once decided on a guidance or non-guidance practice, most managers tend to adhere to it for at least several years, consistent with the recent survey findings (Graham et al., 2005) and the dynamic disclosure theory (Einhorn and Ziv, 2008).

3.3 Descriptive statistics on guidance consistency and changes in guidance frequency

To examine how firms change guidance practice over consecutive years, I use a transition matrix, which calculates the empirical probability of this year's guidance frequency conditional on last year's guidance frequency (see Table 2). Take quarterly guidance for example, 67% firms issuing guidance every quarter last year (*LagFreq*=4) will issue guidance for all quarters this year (*Freq*=4). Overall, the conditional probability declines as it moves away from the diagonal, suggesting that managers tend to stick to their previous guidance practice; hence, past guidance seems more sensible than non-guidance as the benchmark for current guidance decisions.[14]

Table 2 also reveals a non-monotonic relation between *LagFreq* and *Consistent*. Prior studies classify firms as habitual guiders if and only if *LagFreq* $\geq$ 3 and suggest habitual guiders

[14] Some prior studies on guidance stoppage do not control for the pre-stoppage guidance frequency; thus their results are subject to an alternative explanation: firms with less frequent past guidance are more likely to stop guidance. For example, the documented "once bitten twice shy" behavior (Feng and Koch, 2010) can be due to infrequent guiders who are also more likely to miss analysts' forecasts. In untabulated analysis, I replicate their results and find that the significant "*past guidance outcome*" variables become insignificant once I include *LagFreq* in their model (e.g. t-stat [p-value] of *MtBtAnalyst* changes from 2.30 to 0.82 [from 0.02 to 0.41]), consistent with the alternative explanation driving the "once bitten twice shy" phenomenon in the full sample.

are likely following predetermined guidance strategies, and therefore should be more likely to issue consistent guidance (e.g. Brown et al., 2004; Chen et al., 2011). However, the results are inconsistent with this conjecture. Take quarterly guidance for example, only 9% (as many as 43%) of firms with *LagFreq=3* (*LagFreq=1*) issue guidance in consistent patterns in the next year. Besides, classifying habitual guiders based on guidance frequency fails to capture consistent guiders that guide only once a year, and the number of such observations (1,163) exceeds that of 3- or 4-quarter-per-year consistent guidance combined (1,105=1,019+86). Finally, *Consistent* and *Freq* are nonlinearly correlated: Pearson (ρ) = -0.33 (0.09) when non-guidance is included (excluded) for quarterly guidance and ρ = -0.26 (0.16) for annual guidance (unreported), suggesting that the two variables are likely capturing different dimensions of guidance.

4. Research design and empirical results

4.1 Research design

I estimate the following logistic model in which $Consistent_{i,t}$ equals 1 when the guidance pattern for year *t* is identical to the guidance pattern in year *t-1*, and 0 otherwise (see Figure 1).

$$Consistent_{i,t} = \alpha_0 \quad \text{(note: } Consistent_{i,t}=1 \text{ includes consistent non-guidance)}$$

H1: Guidance history: $+ \alpha_1 LagFreq_{i,t} + \alpha_2 LagConsistent_{i,t}$

H2: Information uncertainty: $+ \alpha_3 RetVol_{i,t-1} + \alpha_4 Disp_{i,t-1} + \alpha_5 EarnVol_{i,t}$

H3: Expectation management: $+ \alpha_6 CAR\_EA_{i,t-1} + \alpha_7 MtBtAnalyst_{i,t-1} + \alpha_8 AnalystFollow_{i,t}$

Operating performance: $+ \alpha_9 Loss_{i,t-1} + \alpha_{10} EarnIncrease_{i,t-1} + \alpha_{11} AdjRet_{i,t-1}$

Corporate events: $+ \alpha_{12} MnA_{i,t-1,t} + \alpha_{13} ExecTurnover_{i,t-1,t}$

Alternative guidance motives: $+ \alpha_{14} Restate_{i,t-1} + \alpha_{15} \Delta InsideTrade_{i,t-1,t} + \alpha_{16} MtBtGuid_{i,t-1}$

Other control variables: $+ \alpha_{17} Size_{i,t-1} + \alpha_{18} MktBk_{i,t-1} + \alpha_{19} Leverage_{i,t-1}$

$$+ \alpha_{20} Litigation_{i,t-1} + \alpha_{21} Regulation_{i,t-1} + \alpha_{22} Beta_{i,t-1} \qquad (1)$$

Appendix A elaborates the variable measurement in detail. Note that $LagConsistent_{i,t} = Consistent_{i,t-1}$ to emphasize *past* guidance. The dynamic disclosure theory predicts $\alpha_1>0$ ($\alpha_2>0$) if

one uses past guidance frequency (consistency) to proxy for regular guiders (H1), as regular guiders should be more reluctant to change guidance. The dynamic disclosure theory also suggests that regular guiders (*LagConsistent=1*) mainly drop guidance due to lack of information endowment (H2), hence $\alpha_3 \sim \alpha_5 < 0$; whereas irregular guiders (*LagConsistent=0*) drop guidance also due to lower expected benefits from guiding analyst forecasts to avoid earnings disappointments (H3), hence $\alpha_6 \sim \alpha_8 > 0$.[15] Regular and irregular guiders can also be classified by the conventional frequency-based "habitual" dummy. Because it is an empirical question whether the pattern-based consistency measure or the frequency-based habitual dummy better explains management guidance decisions, I conduct analyses using both measures and compare the results. Requiring two years' guidance history to compute *LagConsistent* reduces the sample period to five years (2003~2007). All continuous variables are winsorized at the 1st and 99th percentiles. Table 3 Panel A reports the summary statistics and Panel B reports the pair-wise Pearson correlations between all variables used in the logistic regressions.

Note that a given guidance determinant usually has an opposite effect in causing a firm to increase versus to decrease guidance frequency. For example, operating performance has been shown to be positively related to disclosure levels (Miller, 2002); hence good performance induces a firm to increase guidance (if not already a full guider), whereas poor performance induces a firm to decrease guidance (if not already a non-guider). Because in both cases *Consistent=0*, the effect of operating performance on *Consistent* is unclear in a pooled regression when both guidance increases and guidance decreases are included in the sample.

To address this issue, I divide the full sample into two subsamples as follows (see Table 3 Panel C). I use Sample I (labeled "Keep-or-Drop") to examine the determinants causing firms to "drop" guidance (given that they are not already non-guiders); hence I exclude observations for

[15] These predictions (H2 and H3) turn the opposite for guidance increases. I discuss this issue in the next paragraph.

which *Freq>LagFreq* or *LagFreq=0*, resulting in 4,162 firm-year observations. I use Sample II (labeled "Keep-or-Increase") to examine the factors causing firms to "increase" their guidance frequency (given that they are not already full-guiders); hence I remove observations for which *Freq<LagFreq* or *LagFreq=4*, leading to 6,660 firm-year observations.[16] Both samples contain the type of inconsistent guidance that is classified as neither increase nor decrease (i.e. switching order only), and all results are robust to excluding these observations. I discuss the results based on Sample I (Keep-or-Drop) at length in Sections 4.2.1 (for H1a) and 4.2.2 (for H2a and H3a). As the results based on Sample II (Keep-or-Increase) are similar, I discuss them in less detail in Section 4.2.3 for H1b~H3b. I report and discuss the results of H1~H3 for quarterly guidance only, as most results are similar for annual guidance and for the joint analysis of quarterly and annual guidance.[17] I discuss the results for H4 (guidance timing and format) in Section 4.2.4.

4.2 Empirical results from testing H1~H4

4.2.1 Testing H1a: the effect of *LagConsistent* on subsequent guidance decreases

Table 4 presents the results for H1a using Sample I ("Keep-or-Drop", consistent non-guiders excluded). Model (1a) is based on all available observations. Consistent with H1a, *LagConsistent* is significantly positive (t-stat=10.26),[18] suggesting that firms with consistent past guidance are less (more) likely to drop guidance (to maintain existing practice) than firms with inconsistent past guidance. *LagFreq* is also positively related to current guidance consistency (t-stat=10.86), consistent with prior literature (e.g. Chen et al., 2011). The economic magnitude of both *LagConsistent* and *LagFreq* is larger than of any other guidance determinant. All else equal, a firm issuing consistent guidance over the past two years is 31 percentage points more likely to

[16] Imposing the data requirement of all independent variables further reduces the sample size. Sample II has a higher attrition rate because 48% of Sample II are consistent non-guiders, who are followed by fewer analysts and hence are more likely to miss analyst related data (see Table 3 Panel A for the data limitations of all variables).
[17] See Appendix B.5 for further results of the annual and joint analyses.
[18] All t-statistics in the pooled regressions are based on standard errors clustered by firm and by year, following Feng and Koch (2010). Tests of multi-collinearity suggest no significant variance inflation (VIF).

maintain its guidance practice this year. Including *LagConsistent* and/or *LagFreq* in the multiple logistic regression significantly improves the model's explanatory power, as pseudo-R^2 increases from 12.66% to 27.68% when both *LagConsistent* and *LagFreq* are included.[19]

To compare *LagFreq* and *LagConsistent* as proxies for regular guiders, I exclude full guiders (*LagFreq=4*) because 67% of full guiders are classified as regular guiders both by frequency and by pattern. After this procedure, *LagConsistent* remains significantly positive (t-stat=6.60) but *LagFreq* turns negative (t-stat= -2.82), suggesting that compared with infrequent guiders, frequent guiders are actually *more* likely to drop guidance subsequently.[20] Hence, the conclusion from prior literature that frequent guiders are less likely to drop guidance seems solely driven by firms issuing guidance every quarter.

Note that because firms consciously chose to issue consistent guidance in the past, *LagConsistent* is an endogenous independent variable; therefore, the results are subject to the following selection bias. Firms in stable environments are likely to issue consistent guidance even if their managers make an independent guidance decision every quarter, which is also consistent with the static disclosure theory. To distinguish the dynamic theory from the static theory, and to mitigate the concern that *LagConsistent* is simply picking up the stability of the guidance determinants, I use three different approaches.[21] First, I control for time-invariant unobservable factors by taking first differences of all guidance determinants (Wooldridge, 2002). If managers make decisions on guidance levels, as suggested in the static theory, then guidance consistency should be explained, to a larger extent, by the changes in guidance determinants as

[19] Although *AnalystFollow*, *Regulation*, and *Beta* are insignificant, they become statistically significant in the directions as documented in prior studies after I drop the guidance history variables from the regression. Thus, my results suggest that these prior findings may attenuate or disappear after accounting for guidance history.
[20] To mitigate the concern of multi-collinearity, I include *LagFreq* and *LagConsistent* one at a time and the results remain qualitatively the same. In particular, *LagFreq* remains negative (unreported t-stat= -3.41).
[21] Because these alternative specifications yield qualitatively the same results but reduce the sample size, I do not report these results in the text. However, all these results are tabulated and available from the author upon request.

opposed to by the levels. Unreported results show that, after including the unsigned changes of guidance determinants from year *t-1* to year *t* in the same regression as before, *LagConsistent* continues to be significantly positive in predicting future consistency (t-stat=7.70), whereas the change variables are largely insignificant.[22] This result is inconsistent with the static theory that guidance consistency is driven by the stability of guidance determinants. In contrast, this result is consistent with the dynamic theory that managers take past guidance as given and effectively make decisions on guidance *changes* rather than on guidance *levels*.

Second, I use a Heckman two-stage model to explicitly model the first stage decision of *LagConsistent* as a function of lagged guidance determinants, following Feng and Koch (2010). To implement the Heckman model, I need an instrumental variable (IV) that is correlated with the endogenous variable (*LagConsistent*) but uncorrelated with *Consistent* after controlling for current guidance determinants (Wooldridge, 2002). My main IV is the uncertainty about earnings in year *t-1*, proxied by lagged return volatility and analyst forecast dispersion. Uncertainty about earnings in year *t-1* should affect managers' guidance decision in year *t-1* (Chen et al., 2011), but should not affect managers' guidance decisions in year *t*, because any uncertainty about earnings in year *t-1* should be fully resolved after the earnings announcement for year *t-1*. Unreported tests also provide empirical verification for the IV criteria: for example, lagged return volatility in year *t-1* significantly explains *LagConsistent* (t-stat = -2.68) but does not explain *Consistent* after controlling for current guidance determinants (t-stat = 0.27). After accounting for the self selection using the Heckman two-stage model, *LagConsistent* remains significantly positive in the second stage (untabulated t-stat = 2.70), mitigating the concern that the previous results are merely driven by spurious associations or mechanical relations.

[22] Results are similar when I (a) measure the change variables without taking absolute values or as ratios deflated by the levels in year *t-1*; and (b) include only changes in the guidance determinants and exclude the levels.

Third, I use propensity score matching techniques. The preceding main test essentially compares two types of firms and finds that consistent guiders (the treated group, *LagConsistent =1*) are less likely to subsequently drop guidance than inconsistent guiders (the control group, *LagConsistent=0*). However, the differential likelihood of guidance omissions could be due to some systematic differences between these two types of firms, rather than due to the effect of guidance history as the dynamic theory suggests. To mitigate this concern, I need two groups of firms that are equally likely to issue consistent guidance based on all other determinants, leaving only *LagConsistent* to differ across the two samples (Li and Prabhala, 2005). Hence in a pooled regression based on the propensity score matched sample, a significant effect of *LagConsistent* is isolated from other confounding determinants and hence can be better interpreted (Rosenbaum and Rubin, 1983). After a one-to-one matching procedure, I find that the propensity scores in the control and the treated groups are statistically indifferent (t-stat = 0.07, unreported), suggesting that the matching procedure has successfully identified a comparable control group.[23] Based on this matched sample, I find that *LagConsistent* continues to load significantly positive in regression (1) (t-stat=6.89, unreported), consistent with H1a.

4.2.2 Testing H2a and H3a: the reasons to drop guidance conditional on *LagConsistent*

To test H2 and H3 that the effects of some guidance determinants differ conditional on *LagConsistent*, I use two complementary approaches. First, based on *LagConsistent,* I partition the sample and statistically test the information uncertainty variables (*RetVol*, *Disp*, *EarnVol*) and the expectation management variables (*CAR_EA*, *MtBtAnalyst*, *AnalystFollow*) separately for consistent guiders and for inconsistent guiders. Second, rather than partition the sample, I interact *LagConsistent* with all other guidance determinants to statistically test the differential effect of each guidance determinant. In addition, I conduct likelihood ratio tests to jointly test the

[23] Results are qualitatively the same if I use one-to-two or one-to-three matching procedures.

differential effects of the determinants predicted in H2 and H3, and to evaluate the explanatory power of *LagConsistent* as a conditioning variable.

Table 5 reports the results using Sample I ("Keep-or-Drop", consistent non-guiders excluded). Model (2a) examines the factors that H2a predicts to cause consistent guiders (i.e. *LagConsistent=1*) to drop guidance. Consistent with H2a, difficulties in predicting future earnings (marked with †'s), proxied by stock returns volatility (*RetVol*, t-stat= -1.70) and analyst earnings forecast dispersion (*Disp*, t-stat= -2.65), are significant factors for consistent guiders to drop guidance. Model (3a) examines the factors that H3a predicts to cause inconsistent guiders (i.e. *LagConsistent=0*) to drop guidance. Consistent with H3a, after controlling for information uncertainty, inconsistent guiders are also more likely to drop guidance if their previous guidance was ineffective in guiding analysts' forecasts to attainable levels (marked with #'s), proxied by cumulative abnormal returns around earnings announcement dates (*CAR_EA*, t-stat=1.75) and a dummy for meeting or beating guided analyst consensus forecasts (*MtBtAnalyst*, t-stat=2.72) in the last year. The number of analysts following (*AnalystFollow*) marginally affects guidance consistency only for inconsistent guiders (t-stat=1.83). Note that these expectation management variables (marked with #'s) are insignificant for consistent guiders. Most control variables are insignificant, hence omitted for brevity.[24] Together, the above results suggest that the failure of past guidance to avoid earnings disappointments is a significant factor for inconsistent guiders to drop guidance, whereas the difficulty in forecasting earnings is a more prominent reason for consistent guiders to drop guidance, consistent with H2a and H3a.[25] Note that the lower pseudo-

[24] An interesting finding on the operating performance variables is that, consistent guiders drop guidance when the *change* in earnings is negative (*EarnIncrease*, t-stat=2.09), whereas inconsistent guiders drop guidance when the *level* of earnings is negative (*Loss*, t-stat= -2.48), suggesting that the two groups use different earnings benchmarks.
[25] The results in Table 5 remain qualitatively the same when I also include the changes of guidance determinants. However, most change variables are insignificant, except *ΔDisp* (t-stat= -2.67 only for consistent guiders), consistent with H2a that consistent guiders are more likely to drop guidance due to *higher* uncertainty.

R^2 for consistent guiders (9.51%) than for inconsistent guiders (19.37%) is consistent with the notion that the guidance decisions of consistent guiders are more likely to be predetermined and hence are less responsive to various guidance determinants.

To compare *LagConsistent* with the conventional frequency-based habitual dummy, I test the same models conditional on a habitual dummy based on past two years' guidance frequency (*LagFreq+Lag2Freq*; hereafter *LagFreq2*).[26] Following Li et al. (2012), I use the common cutoff: guidance for 6 or more quarters over the past two years indicates a habitual guider, and otherwise a sporadic guider. The results based on *LagFreq2* (Models 2a' and 3a') sharply contrast from those based on *LagConsistent* (Models 2a and 3a): habitual guiders (based on *LagFreq2*) are more likely to drop guidance when past guidance failed to avoid earnings disappointments (t-stat=2.12 [2.68] for *CAR_EA* [*MtBtAnalyst*]), but sporadic guiders are not (t-stat=1.67 and 0.73 respectively), opposite to the results based on *LagConsistent*. Also, the pseudo-R^2 for "habitual" guiders (23.96%) is larger than for sporadic guiders (13.12%), suggesting that they are less likely to issue guidance as a routine. Overall the results based on *LagFreq2* as a conditioning variable are inconsistent with the dynamic disclosure theory, which predicts that regular guiders should be more reluctant to drop guidance than irregular guiders (H2a and H3a).

Note that the purpose of H2 and H3 is to examine whether some guidance determinants have conditional effects, in the sense that they are significant only for inconsistent guiders but insignificant for consistent guiders, or vice versa. Hence it is not my primary interest whether the difference itself is significant. For completeness, I run a single regression with the conditioning variable (*LagConsistent* or the habitual dummy) interacting with all the independent variables. I conduct t-tests (and likelihood ratio tests) to examine the difference in the effects of guidance

[26] Because I measure *LagConsistent* over the past two years, I define *Habitual* also over the past two years for the results to be comparable. All results are similar if I define *Habitual* based on guidance frequency last year, using the common cutoff of at least three quarters' guidance indicating a habitual guider (e.g. Rogers et al., 2009).

determinants individually (and jointly) with results reported in the "Difference" column (and at the bottom panel) in Table 5. Although the variables predicted in H2a and H3a do not differ significantly in their effects on consistent guiders versus on inconsistent guiders, the likelihood ratio test on all interactive terms rejects the null that consistent guiders and inconsistent guiders are affected by guidance determinants in the same way (χ^2=42.137, DF=21, p=0.0004).

While the results based on *LagConsistent* are consistent with the theoretical predictions, the results based on *Habitual* are either inconsistent or weak. Note that the difference between the intercepts in Models (2) and (3) represents the main effect of the conditioning variable in the single regression with interactive terms. Theory predicts that regular guiders are more likely to maintain guidance and less likely to drop guidance; hence this main effect should be positive. Although this is true with *LagConsistent* (t-stat= 2.76), the main effect turns negative with the habitual dummy in Models (2a') and (3a') (t-stat= -4.40), suggesting that if classified based on guidance frequency, "habitual" guiders are actually more likely to drop guidance than "sporadic" guiders, inconsistent with prior studies (e.g. Chen et al., 2011).[27] Moreover, *LagConsistent* is significantly positive in both Model (2a') and Model (3a') (t-stat=3.27 and 7.45, respectively), but in contrast, *LagFreq* is only marginally significant in Model (2a) (t-stat=1.86), consistent with the notion that regular guiders are consistent guiders, but not necessarily frequent guiders.

In summary, when I use past guidance to predict future guidance omissions, the result of *LagConsistent* is more robust and more consistent with the dynamic disclosure theory (Einhorn and Ziv, 2008) – regular guiders are reluctant to drop guidance unless managers lack information endowment. The result of *LagFreq* (and the derived *Habitual* dummy) is not robust (as it is solely driven by firms issuing guidance every quarter and is only marginally significant when

[27] The negative main effect of the habitual dummy remains significant (unreported t-stat = -3.44) when I exclude *LagConsistent* from the single regression with interactive terms, mitigating the concern that the result is due to the correlation between the habitual dummy and *LagConsistent* (unreported Pearson correlation = -0.31).

LagConsistent=1) and is inconsistent with Einhorn and Ziv (as habitual guiders rather than sporadic guiders are more likely to drop guidance and more responsive to various determinants).

4.2.3 Testing H1b~H3b: the effect of *LagConsistent* on subsequent guidance increases

In this section, I examine how past guidance consistency (*LagConsistent*) affects future guidance increases. Parallel to H1a~H3a, H1b~H3b predict that, compared to firms with past inconsistent guidance, firms with past consistent guidance (including consistent non-guidance) are less likely to increase guidance (especially less likely to increase guidance for the purpose of expectation management). I use Sample II ("Keep-or-Increase"; consistent full guiders excluded and consistent non-guiders included) to test H1b~H3b. Results are reported in Table 6.

In Model (1b), *LagConsistent* is significantly positive (t-stat=8.49), consistent with H1b. Firms with consistent guidance (or non-guidance) over the last two years are 21 percentage points more likely to maintain their existing practice, exceeding the marginal effect of any other guidance determinant. Although *LagFreq* is also statistically and economically significant (t-stat= -14.91; marginal effect= -20 percentage points), its sign is inconsistent with H1b, suggesting that more frequent guiders are *less* likely to maintain their current practice, but *more* likely to further increase guidance.[28] Compared with Model (1a) (in Table 4), the control variables in Model (1b) are less significant, suggesting that firms do not increase guidance as spontaneously as they drop guidance, in response to various guidance determinants, consistent with Einhorn and Ziv (2008) and Graham et al. (2005) – investors' anticipation for continued future guidance serves as a deterrent to increase (or to initiate) guidance in the first place. Consistent with the dynamic disclosure theory, including the guidance history variables more than triples the pseudo-R^2 of the model (increasing from 7.25% to 23.41%), and these results are

[28] To mitigate the concern of multi-collinearity, I include *LagFreq* and *LagConsistent* one at a time and the results remain qualitatively the same. In particular, *LagFreq* remains negative (unreported t-stat= -18.76).

robust to the procedures that account for the endogeneity of *LagConsistent* (same approaches as in Section 4.2.1).[29]

Unlike consistent guiders' guidance omissions are immediately subject to investors' negative interpretation, when firms increase or initiate guidance, investors likely build up their expectation for continued future guidance in a gradual manner (Bhojraj et al., 2011). Therefore, in contrast to Models (2a) and (3a) in Table 5, the likelihood ratio test result for all interactive terms for Models (2b) and (3b) in Table 6 is insignificant (χ^2=18.375, DF=20, p=0.5627), suggesting that guidance determinants have similar effects on the guidance increase decisions by inconsistent guiders as by consistent guiders and consistent non-guiders. However, the pseudo-R^2 for consistent guiders and consistent non-guiders (7.88%) is smaller than for inconsistent guiders (18.62%), consistent with them being less responsive to various guidance determinants.

4.2.4 Testing H4: guidance timing and format of consistent and inconsistent guiders

The results thus far focus on guidance *issuance* – consistent guiders and consistent non-guiders adhere to their existing practice and are less responsive to various guidance determinants. Unreported firm-level analysis shows that, of all 1,864 sample firms, 684 (778) issued guidance (non-guidance) in consistent patterns for at least 3 years (over the 7-year period). One possible explanation for such persistent guidance patterns is that, instead of making guidance decisions on a quarter-by-quarter basis, these firms have adopted predetermined guidelines to guide their guidance practice, as is implied in the dynamic disclosure theory (Einhorn and Ziv, 2008) and in recent surveys (e.g. Graham et al., 2005).

As H4 predicts, if consistent guiders are following predetermined guidance strategies, then they are more likely to issue guidance earlier during the quarter and are less likely to change guidance timing and format. To test H4, I examine both the means and the variances of the

[29] Results are tabulated and available from the author upon request.

guidance timing and format variables at the firm level, and compare these statistics between consistent guiders and inconsistent guiders (see Table 7).[30] Compared with inconsistent guiders, the quarterly guidance date is less volatile for consistent guiders (t-stat= -2.39 or -3.28 when the guidance date is measured relative to the earnings announcement date or relative to the fiscal quarter ending date, *VarEAD* or *VarHorizon* respectively). Moreover, consistent guiders issue guidance earlier in the quarter by 3.56 days (*MeanHorizon*), consistent with H4.

I also find that consistent guiders' guidance format is less volatile (*VarPrec*, t-stat= -4.17) and more specific, predominantly range and point forecasts (*MeanPrec*, t-stat= 2.47). Moreover, a significantly larger proportion of their guidance is bundled with the previous quarter's earnings announcement (*MeanBundled_EAD*) and is classified as confirming guidance (*MeanNoSurp*). This is consistent with consistent guiders following predetermined strategies to issue guidance even when the market expectation is already aligned with their own estimate (Clement et al., 2003).[31] The extremely high percentage of bundled forecasts by consistent guiders (86.60%) is consistent with the conjecture that earnings guidance is likely formalized as a standard practice at these firms and therefore managers do not make an independent decision to issue guidance on a quarter-by-quarter basis (Brown et al., 2004; Berger, 2011).[32]

4.3 Robustness checks

See Appendix B for further robustness checks using alternative regression specifications, alternative samples, variable definitions, and including additional control variables.

[30] In this subsection *only*, as I conduct firm level tests, I define consistent guiders and inconsistent guiders also at the firm level, using a minimum of 3 years of consistent *joint* guidance patterns as the criterion for consistent guiders. The results remain qualitatively the same if I use quarterly guidance patterns instead.
[31] The results in Table 7 are similar for annual guidance (unreported for brevity but available upon request).
[32] I contacted the investor relations personnel at several firms in my sample. They responded that they have adopted and been implementing the current guidance practice for some time (usually several years) and do not expect to change it anytime soon. However, they do not publicly disclose or commit to their existing guidance practice.

5. Summary and conclusions

Hirst et al. (2008) point out that prior literature overlooks the iterative nature of earnings guidance and hence focuses on the levels (i.e. the first moment) of guidance. This study fills these voids by empirically evaluating the dynamic disclosure theory (Einhorn and Ziv, 2008) and investigating the variability (i.e. the second moment) of guidance – a dimension of guidance that is neglected in prior literature. Using a balanced panel of 13,048 firm-years (1,864 firms over 7 years), I find that 66% of the guidance patterns are consistent (39% consistent guidance and 27% consistent non-guidance). My firm-level analysis shows that 1,462 firms have consistent patterns for at least 3 years (684 consistent guiders and 778 consistent non-guiders). Even when firms change their guidance patterns, they do it gradually, suggesting that managers tend to follow their previous guidance practice and decide on guidance *changes*.

Consistent with the dynamic disclosure theory and recent survey results (Graham et al., 2005), I find empirical evidence that past guidance has first order effects on subsequent guidance decisions. Firms with consistent past guidance are more likely to maintain their existing practice and only drop guidance when managers lack information endowment (i.e. when managers are *unable* to provide guidance). In contrast, firms with inconsistent past guidance are also more likely to withhold guidance due to expected losses or after unsuccessful expectation management (i.e. when managers are *unwilling* to provide guidance). All else equal, having issued guidance in consistent patterns over the *past* two years increases the likelihood of maintaining the existing practice *this* year by about 20~30 percentage points, a larger effect than any other guidance determinant in economic magnitude. Moreover, my results suggest that, compared with the conventional frequency-based "habitual" variable, the pattern-based "consistency" variable is a more robust proxy for firms issuing routine guidance (i.e. the tendency to maintain consistent

practice). Overall, including guidance history variables significantly improves the statistical power of the model that explains future guidance, as the pseudo-R^2 increases by 100~200%. To the extent that other guidance determinants are correlated with guidance history, failure to account for guidance history likely leads to spurious results and misleading interpretations.

The results are robust to including the changes (besides levels) of guidance determinants, propensity score matching, and two-stage selection models, mitigating the concern that guidance consistency is solely driven by firms operating in stable environments or due to the endogenous self selection of *LagConsistent*. Besides, compared with inconsistent guiders, consistent guiders are more likely to (a) issue guidance with higher specificity and earlier in the quarter; (b) bundle their guidance with earnings announcements; (c) issue guidance even when market expectations are already aligned with managers' belief; and (d) maintain consistency in their guidance timing and format over time. These results suggest that consistent guiders likely make *ex ante* guidance decisions rather than *ex post* decisions every quarter (Leuz and Verrecchia, 2000; Core, 2001). Therefore, when studying any repeated discretionary disclosure, it is important to consider the timing when firms exercise their discretion over their disclosure choices.

Two important caveats exist. First, the documented guidance consistency seems unique to the post-Reg FD period. Prior studies suggest that guidance was largely sporadic in the pre-Reg FD period and hence time-specific determinants are more important in explaining managers' decisions to issue guidance for a particular quarter (Cotter et al., 2006). Such results do not seem to extend to the post-Reg FD period. Second, even though the result of *LagConsistent* is robust to various specifications that account for the endogenous nature of *LagConsistent*, to the extent that my control variables are unlikely to fully capture all aspects of management guidance decisions, I cannot completely rule out the alternative explanation that some unobservable determinants

may drive guidance consistency even though managers are making independent guidance decisions every quarter.[33] However, given the increasing number of consistent guiders and their persistent guidance patterns in the post-Reg FD period, managers seem to follow their previous guidance practice. Therefore, using past guidance as the benchmark seems more reasonable in analyzing managers' current guidance decisions, than assuming non-guidance as the uniform benchmark for all firms and for all quarters, as implied by the level specifications (e.g. guidance frequency) that are widely used in the existing literature. The guidance consistency measure developed in this study provides future research with a new design that incorporates past guidance as the benchmark for managers' current guidance decisions.

[33] For this reason, instead of making inferences at the individual firm level, it is more appropriate to interpret my results at the subsample level: firms with consistent guidance patterns *as a group* are more likely to make *ex ante* guidance decisions than firms with inconsistent guidance patterns.

Appendix A – Variable Definitions, Data Sources, and Predicted Relations

I test the effect of past guidance consistency on subsequent guidance omissions using the following variables (firm subscript omitted for brevity). I use the same variables to test the effect on guidance increases, except that I adjust some variables (marked with *'s) so that they can also apply to consistent non-guiders. All years and quarters are in fiscal terms.

A.1 Variable Definitions

Dependent variable:

$Consistent_t$ = an indicator variable equal to 1 if the guidance pattern (including non-guidance) in year *t* is identical to that in year *t-1*, and 0 otherwise (see Figure 1 for examples).

Guidance history variables (H1):

$LagFreq_t$ = a count variable equal to the number of fiscal quarters in which earnings guidance was provided in year *t-1*

$LagConsistent_t = Consistent_{t-1}$ = an indicator variable equal to 1 if the guidance pattern in year *t-1* is identical to that in year *t-2*, and 0 otherwise (see Figure 1 for examples).

Information uncertainty variables (H2):

$RetVol_{t-1}$ = standard deviation of daily raw stock returns over year *t-1*.

$Disp_{t-1}$ = average over year *t-1* of analyst forecast dispersion at the beginning of each quarter.

$EarnVol_t$ = standard deviation of seasonal changes in quarterly EPS over year *t* (deflated by beginning-of-year total assets).

Expectation management variables (H3):

$CAR\_EA^*_{t-1}$ = average over year *t-1* of cumulative abnormal return (i.e. market-adjusted) around the earnings announcements ([-12, 1] trading day window) *only for* quarters that the managers issued guidance.

$MtBtAnalyst^*_{t-1}$ = average over year *t-1* of an indicator variable equal to 1 if realized quarterly EPS is greater than or equal to *analyst* consensus forecasts (based on the last forecast before the fiscal quarter ends) *only for* quarters that the managers issued guidance, and 0 otherwise.

$AnalystFollow_t$ = average over year *t* of the number of analysts following the firm (i.e. issuing earnings forecasts for the firm) at the beginning of each quarter.

Operating performance variables:

$Loss_{t-1}$ = percentage of quarters with losses in year *t-1*.

$EarnIncrease_{t-1}$ = percentage of quarters with earnings increase relative to 4 quarters before during the year *t-1*.

$AdjRet_{t-1}$ = Cumulative return adjusted for market return over year *t-1*.

Corporate events variables:

$MnA_{t-1,t}$ = an indicator variable set to 1 if the firm engaged in a merger or an acquisition in year *t-1* or in year *t*, and 0 otherwise.

$ExecTurnover_{t-1,t}$ = an indicator variable set to 1 if a CEO or CFO turnover occurs in year *t-1* or in year *t*, and 0 otherwise.

Alternative guidance motivation variables:

$Restate_{t-1}$ = an indicator variable set to 1 if the firm issued financial restatements in year *t-1*, and 0 otherwise.

$\Delta InsideTrade^{*}_{t-1,t}$ = percentage of quarters in which a corporate insider traded the company's stocks in year *t-1* but not in the corresponding quarter in year *t*.

$MtBtGuid^{*}_{t-1}$ = average over year *t-1* of an indicator variable set to 1 if realized quarterly EPS is greater than or equal to *management* earnings guidance (the last guidance chosen if more than one exists), and 0 otherwise. (This variable is dropped in the tests of guidance increases, because consistent non-guiders [48% of Sample II "Keep-or-Increase"] issued no guidance in year *t-1*.)

Other control variables:

$Size_{t-1}$ = natural logarithm of total assets at the end of year *t-1*.

$MktBk_{t-1}$ = ratio of market value to book value of equity at the end of year *t-1*.

$Leverage_{t-1}$ = ratio of total liabilities to total assets at the end of year *t-1*.

$Litigation_{t-1}$ = an indicator variable set to 1 for high litigious industries including Biotechnology (SIC 2833-2836), Computer (SIC 3570-3577), Electronics (SIC 3600-3674), Programming (SIC 7371-7379), R&D Services (SIC 8731-8734), and Retailing (SIC 5200-5961), and 0 otherwise.

$Regulation_{t-1}$ = an indicator variable set to 1 for regulated industries including Telephone (SIC 4812-4813), Television (SIC 4833), Cable (SIC 4841), Communications (SIC 4811-4899), Gas (SIC 4922-4924), Electricity (SIC 4931), Water (SIC 4941), and Financial (SIC 6021-6023, 6035-6036, 6141, 6311, 6321, 6331), and 0 otherwise.

$Beta_{t-1}$ = slope coefficient from estimating Sharpe's (1964) market model using daily stock returns over year *t-1*.

*** Variables adjusted for the tests of guidance increases:**

$CAR\_EA^{*}_{t-1}$ = average over year *t-1* of cumulative abnormal return (i.e. market-adjusted) around the earnings announcements ([-12, 1] trading day window) of *ALL* quarters.

$MtBtAnalyst^{*}_{t-1}$ = average over year *t-1* of an indicator variable equal to 1 if realized quarterly EPS is greater than or equal to analyst consensus forecasts (based on the last forecast before the fiscal quarter ends) for *ALL* quarters, and 0 otherwise.

$\Delta InsideTrade^{*}_{t-1,t}$ = percentage of quarters in which an insider trading occurred in year *t* but not in the corresponding quarter in year *t-1*.

A.2 Data Sources:

- First Call: management earnings forecasts, analyst forecasts, actual earnings
- Compustat: financial data
- CRSP: SIC codes, stock price data
- I/B/E/S: additional analyst data
- SDC: merger and acquisition dates
- ExecuComp: CEO/CFO turnovers
- RiskMetrics: board structure data
- Government Accountability Office (GAO): financial restatement data
- Thomson Reuters: insider trading data

A.3 Expected Relations between Independent Variables and *Consistent*$_t$

The following table lists the expected relations between each independent variable and the dependent variable (*Consistent*) for Sample I (Keep-or-Drop) and Sample II (Keep-or-Increase).

Variable		Expected Effect on Subsequent Guidance Decisions, Using Last Year's Guidance as the Benchmark.	Predicted Sign in Sample I	Predicted Sign in Sample II
(H1) Guidance History	$LagFreq_t$	Prior studies classify frequent guiders as "habitual" guiders, suggesting that they are more likely to subsequently issue consistent guidance (e.g. Rogers et al., 2009).	+	+
	$LagConsistent_t$	H1 predicts that consistent guiders are more likely to subsequently issue consistent guidance.	+	+
(H2) Information Uncertainty	$RetVol_{t-1}$	Higher stock returns volatility proxies for higher information uncertainty (e.g. Feng and Koch, 2010), hence increasing the likelihood of dropping guidance, and reducing the likelihood of increasing guidance.	-	+
	$Disp_{t-1}$	Larger analyst earnings forecast dispersion proxies for higher information uncertainty (e.g. Feng and Koch, 2010), hence increasing the likelihood of dropping guidance, and reducing the likelihood of increasing guidance.	-	+
	$EarnVol_t$	Higher earnings volatility proxies for less earnings predictability (e.g. Waymire, 1985), hence increasing the likelihood of dropping guidance, and reducing the likelihood of increasing guidance.	-	+
(H3) Expectation Management	CAR_Ea_{t-1}	Positive reactions to earnings announcements (given that managers had issued guidance for the quarter) in the previous year proxies for successful "expectation management" with guidance (Feng and Koch, 2010), hence reducing the likelihood of dropping guidance, and increasing the likelihood of increasing guidance.	+	-
	$MtBtAnalyst_{t-1}$	Meeting or beating analyst consensus forecasts (given that managers had issued guidance for the quarter) in the previous year also proxies for successful "expectation management" with guidance (Feng and Koch, 2010), hence reducing the likelihood of dropping guidance, and increasing the likelihood of increasing guidance.	+	-
	$AnalystFollow_t$	Larger analyst following proxies for a larger demand for earnings guidance (e.g. Lang and Lundholm, 1993) and proxies for more benefits from "expectation management" (e.g. Feng and Koch, 2010), hence reducing the likelihood of dropping guidance, and increasing the likelihood of increasing guidance.	+	-
Operating Performance	$Loss_{t-1}$	More losses proxies for poor performance (e.g. Houston et al., 2010; Chen et al., 2011), hence increasing the likelihood of dropping guidance, and reducing the likelihood of increasing guidance.	-	+
	$EarnIncrease_{t-1}$	Earnings increases are associated with higher level of voluntary disclosure (e.g. Miller, 2002; Houston et al., 2010), hence reducing the likelihood of dropping guidance, and increasing the likelihood of increasing guidance.	+	-
	$AdjRet_{t-1}$	Positive abnormal returns proxy for good performance (e.g. Chen et al., 2011), hence reducing the likelihood of dropping guidance, and increasing the likelihood of increasing guidance.	+	-
Corporate Events	$MnA_{t-1,t}$	Mergers and acquisitions bring changes to firms' operation and cause earnings predictability to decrease, hence increasing the likelihood of dropping guidance, and reducing the likelihood of increasing guidance.	-	+
	$ExecTurnover_{t-1,}$	CEO and CFO turnovers not only bring changes to firms' operation but also appoint less informed managers to new positions (Brochet et al., 2011), hence increasing the likelihood of dropping guidance, and reducing the likelihood of increasing guidance.	-	+
Alternative Guidance Motives	$Restate_{t-1}$	Financial restatement proxies for managers' opprotunistic guidance incentives (Li et al., 2012). To the extent that such opportunistic guidance motivation may or may not continue in subsequent periods, I do not give directional prediction on its relation with *Consistent*.	?	?
	$\Delta InsideTrade_{t-1,t}$	Inside trading activities entail more disclosure (including earnings guidance) from managers under the SEC rule 10b5 "abstain-or-disclose" requirement (Li et al., 2012). Therefore, insider trading occuring in more (fewer) quarters would lead to an increase (a decrease) in guidance frequency due to the "abstain-or-disclose" purposes.	-	-
	$MtBtGuid_{t-1}$	Failing to meet or beat managers' own guidance indicates managers' opportunistic incentives to issue guidance (Li et al., 2012). Besides, meeting or beating managers' own guidance is a more sustainable strategy (Feng and Koch, 2010), hence increasing the likelihood of consistent guidance.	+	na
Other Control Variables	$Size_{t-1}$	Prior literature suggests that larger firms provide more guidance (e.g. Kasznik and Lev, 1995), hence are more (less) likely to increase (decrease) guidance. However, larger firms also tend to be followed by more analysts and are examined more by investors, and hence are more likely to maintain consistent guidance or consistent non-guidance.	+	?
	$MktBt_{t-1}$	Higher market-to-book ratio proxies for higher proprietary costs of disclosure because of more growth option than assets in place (e.g. Bamber and Cheon, 1998), hence increasing the likelihood of dropping guidance, and reducing the likelihood of increasing guidance.	-	+
	$Leverage_{t-1}$	The effect of financial leverage on guidance changes is unclear.	?	?
	$Litigation_{t-1}$	Firms in high litigious industries are likely to issue more guidance in order to prevent potential lawsuits associated with unwarned bad news (e.g. Skinner, 1994; 1997). However, litigation can also reduce guidance frequency if managers are held responsible for inaccurate forecasts (Rogers and Van Buskirk, 2009). Therefore, the net effect of litigation on guidance changes is unclear.	?	?
	$Regulation_{t-1}$	Firms in regulated industries have been documented to have different disclosure requirement than non-regulated firms (e.g. Li et al., 2012). However, the effect of regulated industry membership on guidance changes is unclear.	?	?
	$Beta_{t-1}$	Higher beta proxies for higher expected benefits from using increased voluntary disclosure to reduce the cost of equity (e.g. Ajinkya et al., 2005; Lambert et al., 2007). However, higher beta can reduce the earnings response coefficient, hence raising the materiality threshold and reducing overall disclosure levels (Heitzman et al., 2010). Therefore, the net effect of beta on guidance changes is unclear.	?	?

Appendix B – Robustness Tests[34]

B.1 Robustness to Different Samples and Regression Specifications

The significant effect of *LagConsistent* on *Consistent* is robust to the following samples: (a) the joint set of Sample I and Sample II; (b) the intersection set of Sample I and Sample II; (c) removing inconsistent guidance that is classified as "switching order only" from either Sample I or Sample II; (d) removing guidance stoppers from either Sample I or Sample II; and (e) comparing consistent guiders only with stoppers. Results are also robust to the following research specifications: (a) probit models; (b) Poisson regression of guidance frequency; (c) when I replace *LagConsistent* with *LagDecrease* and *LagIncrease*, both of which are dummy variables that are set to one if and only if the firm decreased or increased guidance over the last two years respectively, the coefficients on both variables are significantly negative (t-stat= -5.04 and -7.53 respectively). This result suggests that the main result of inconsistent guidance followed by inconsistent guidance is not solely driven by firms reverting to their previous practice after a temporary deviation (e.g. issuing guidance for four, three, and then four quarters in three consecutive years).

B.2 Robustness to Different Variable Measurement

The significant effect of *LagConsistent* on *Consistent* is robust to the following alternative variable measurement: (a) replacing variables that are based only on quarters with guidance (*MtBtAnalyst* and *CAR_EA*) with variables based on all quarters regardless of guidance (*MtBtAnalyst_All* and *CAR_EA_All*); (b) defining the merger and acquisition dummy (*MnA*) as one only if the deal value is greater than or equal to 5% of the acquirers' total assets and zero otherwise; (c) replacing past guidance frequency (*LagFreq*) with a habitual dummy variable that is set to one if a firm issued guidance for at least three quarters in the preceding fiscal year, and zero otherwise, following Rogers et al. (2009); (d) replacing past guidance frequency (*LagFreq*) with a habitual dummy variable that is set to one if a firm issued guidance for at least six quarters in the preceding two fiscal years, and zero otherwise, following Li et al. (2012); and (e) matching to the current year with guidance determinants measured in the current year, rather than with those measured in the preceding year; such determinants include measures of information uncertainty (*RetVol, Disp* and *EarnVol*) and earnings performance (*Loss* and *EarnIncrease*).

B.3 Robustness to Including Additional Variables

Ajinkya et al. (2005) show that board structure affects management guidance decisions. The results are robust to including five board structure variables: board size (number of board members); board independence (percentage of independent board members); average age of the board members; board-audit-committee relation (percentage of board members also on the audit committee); and interlocked board (percentage of board members classified as interlocked per RiskMetrics). Consistent with Ajinkya et al., board independence is positively correlated with guidance consistency, but it is significant only for inconsistent guiders for quarterly guidance. For annual guidance, however, this result is significant both for consistent and for inconsistent guiders, suggesting that annual guidance is more affected by board independence than quarterly

[34] All results are available from the author upon request.

guidance. A caveat follows because board structure variables are noisy proxies for corporate governance, hence readers should interpret the results with caution (Brickley and Zimmerman, 2010). Including board structure variables significantly reduces the sample size.

Wang (2007) suggests that R&D expenditure, a proxy for proprietary costs, affects firms' public guidance decisions. All my results are qualitatively the same after controlling for this variable; however, as Wang noted, requiring this variable substantially reduces the sample size. Bhojraj et al. (2011) show that the number of segments is positively related with guidance frequency. All my results are robust to controlling for the number of segments. However, the requirement of this additional variable also substantially reduces the sample size. My results are also robust to the inclusion of industry fixed effects.

B.4 Robustness to Extending the Measurement Window of the Guidance History Variables

All results are robust to measuring past guidance consistency (*LagConsistent*) and past guidance frequency (*LagFreq*) with up to four years' of guidance history. Einhorn and Ziv (2008) predict that, as the length of regular guidance history increases, the incentive to maintain guidance consistency gets stronger. To test this hypothesis, I include two additional variables to Model (1a) and Model (1b), namely, *LagConsistent2*, and *LagConsistent3*, which are set to one if the past three and four fiscal years exhibit an identical guidance pattern, and zero otherwise.

All results are qualitatively the same after including these two variables in regression (1). In particular, *LagConsistent* remains significant at 0.0001 level. However, *LagConsistent2* and *LagConsistent3* are insignificant, suggesting that *LagConsistent* (based on the past two years) is an adequate proxy for consistent guidance history. Next, I divide the sample into four groups based on the duration of past guidance consistency and conduct similar analysis as in Section 4.2.2. I find that, as the duration of past guidance consistency increases, the percentage of firms maintaining consistent guidance increases from 30.4% to 79.3%, but most of the difference concentrates in whether the firm issued consistent guidance in the past *two* years (p-value < 0.0001). There is weak evidence that the likelihood of consistent guidance is higher as the duration of past guidance consistency increases from two years to three years (p-value = 0.0562), consistent with Einhorn and Ziv's (2008). There is also evidence that, as the duration of past guidance consistency increases, firms are more likely to give up guidance due to information uncertainty rather than due to expectation management. Overall the results suggest that guidance consistency in the past *two* years is an adequate proxy for regular guidance history as predicted in the dynamic disclosure theory.

B.5 Results of Annual Guidance and Joint Tests of Annual and Quarterly Guidance

All results regarding *LagFreq* and *LagConsistent* are similar (sometimes even stronger) in the setting of quarterly updates of annual guidance (hereafter, annual model) and the joint tests of annual and quarterly guidance (hereafter, joint model). Below, I discuss some of these results that differ from the results in the quarterly model.

Model (1a') (testing H1a but excluding *LagFreq=4*): instead of becoming significantly negative, *LagFreq* becomes insignificant in the annual model (t-stat=0.70) and in the joint model

(t-stat=1.03 and 0.52 for quarterly and annual guidance frequency respectively), suggesting that *LagFreq* is weakly capturing firms issuing routine guidance.

Model (2a and 3a) (testing H2a and H3a, conditional on *LagConsistent*): executive turnovers (*ExecTurnover*) are significant in causing consistent guiders to drop guidance (t-stat= -1.82 and -2.48) but not for inconsistent guiders (t-stat= -0.53 and -0.94) in the annual and joint models, respectively, consistent with H2a that consistent guiders are more likely to drop guidance due to uninformed managers.

Model (2a' and 3a') (testing H2a and H3a, conditional on the habitual dummy): the main effect of the habitual dummy is positive (t-stat=2.85) in the joint model, but is negative (t-stat= -4.40) in the annual model, suggesting that the habitual dummy is not robust in these models.

Model (2b and 3b) (testing H2b and H3b, conditional on *LagConsistent*): *LagFreq* is insignificant (t-stat=0.61 and -1.56 for quarterly and annual guidance frequency respectively) conditional on *LagConsistent=1*, suggesting that the significance of *LagFreq* depends on the value of *LagConsistent*.

Overall the tenor of the results in the annual model and in the joint model is the same as the tabulated results of the quarterly model as reported in the main text.

B.6 Robustness to Other Specifications in Addressing the Endogeneity of *LagConsistent*

Approach (I) (page 19): including additional control variables for the changes in guidance determinants. The results are robust to the following specifications: (a) using only change variables and exclude the level variables; (b) using change variables also for *Litigation* and *Regulation*; (c) including both deflated and undeflated change measures; and (d) only including change variables that are significant from the previous models.

Approach (II) (page 20): using the Heckman two-stage models. The results are robust to the following specifications: (a) excluding analyst-related variables and guidance outcome variables in the first stage, because these variables are likely also endogenous; (b) excluding *LagFreq* from the first stage and/or from the second stage, because it is also endogenous; (c) including *Loss*, *EarnIncrease*, *EarnVol* averaged over three preceding years (year *t-3* to year *t-1*) as additional instrumental variables (IVs); and (d) including board independence in year *t-1* in the first stage as an additional IV (Ajinkya et al., 2005).

Approach (III) (page 21): using propensity score matching techniques. The results are robust to the following specifications: (a) using one-to-two or one-to-three matching procedures; (b) including additional IVs indicated above in the matching procedure; and (c) excluding *LagFreq* in the matching procedure, because it is also endogenous.

All the results above also apply to the annual model and the joint model.

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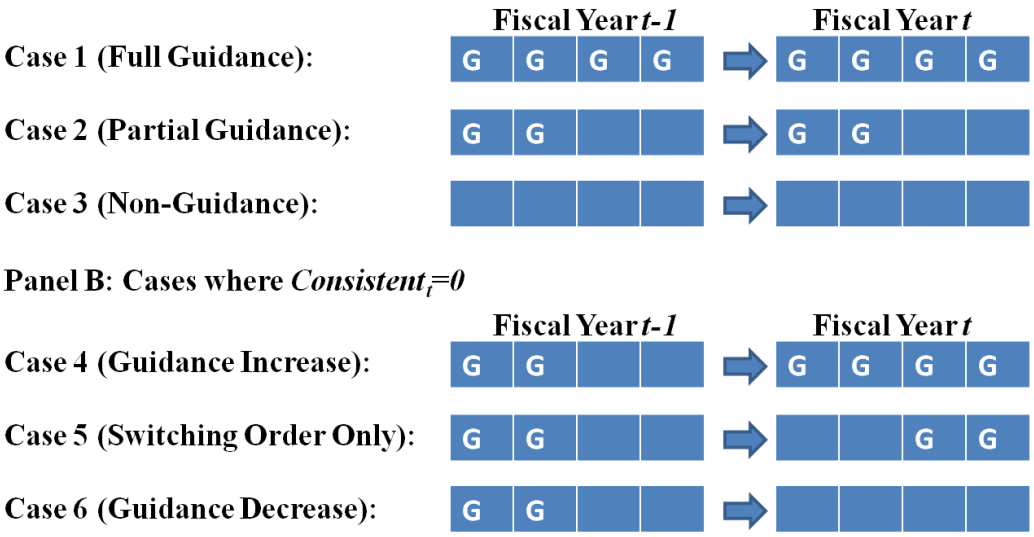
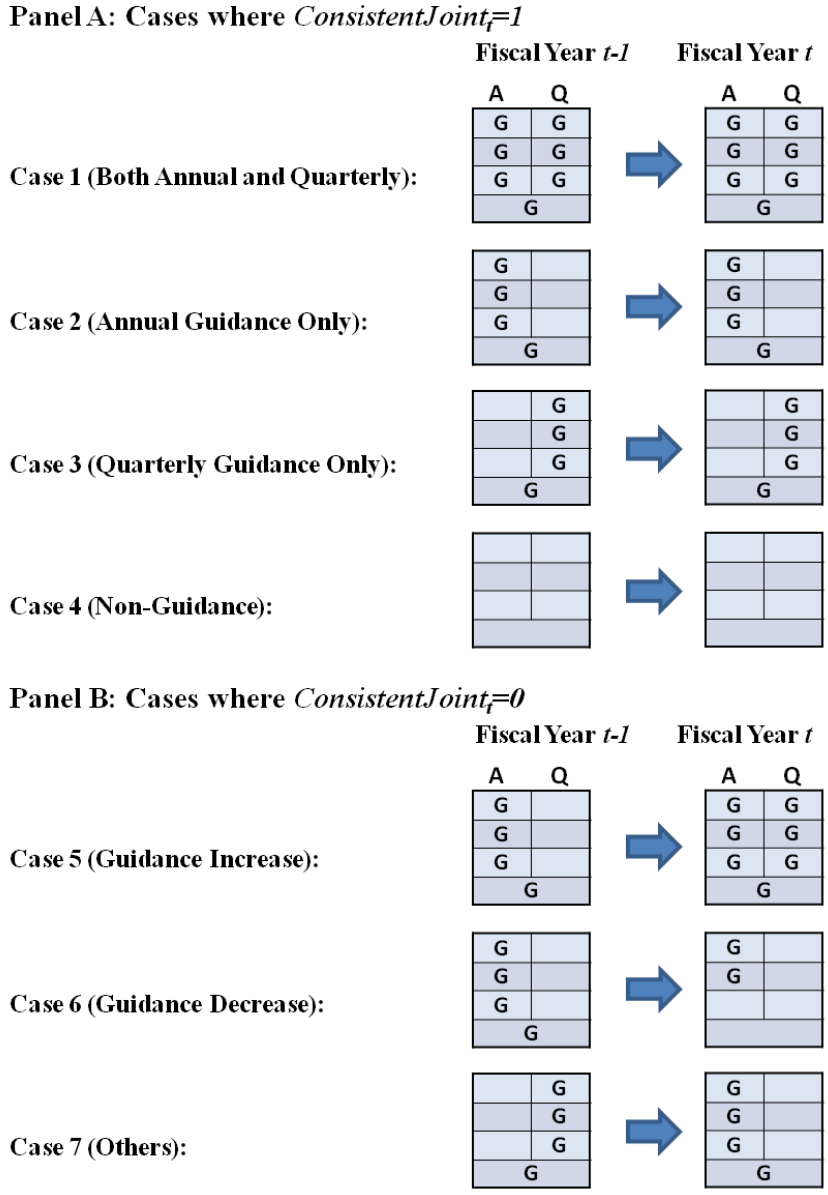
Figure 1 – Measurement of Guidance Consistency (I)
***Separately* Examining Patterns of Quarterly or Annual Earnings Guidance**



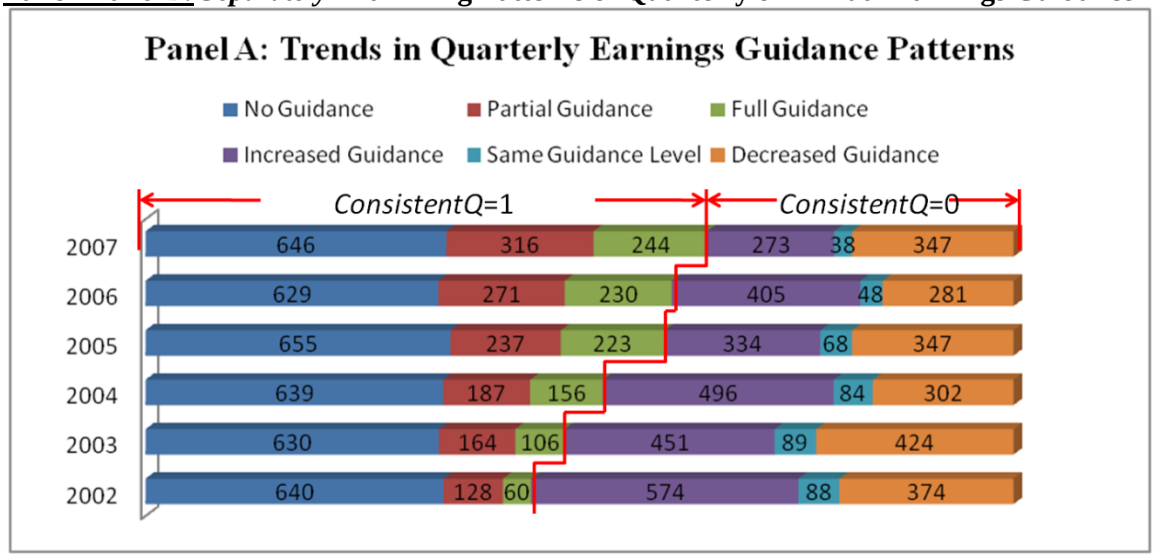
Notes: Guidance pattern for each year is described by a 4x1 vector with each cell corresponding to each constituting fiscal quarter of the year (Q1 to Q4 from left to right). "G" indicates that a management earnings forecast has been issued during that fiscal quarter. See Table 1 for details on the construction of the earnings guidance sample.

Figure 2 – Measurement of Guidance Consistency (II)
***Jointly* Examining Patterns of Quarterly and Annual Earnings Guidance**

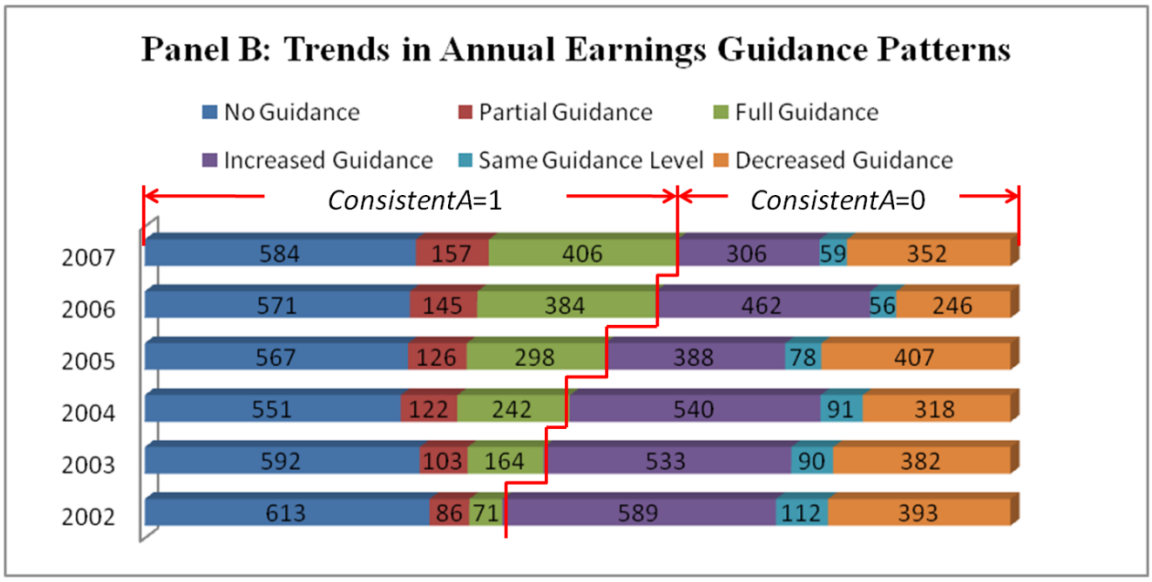


Notes: Guidance pattern for each year is described by a 4x2 matrix with each row corresponding to each constituting fiscal quarter of the year (Q1 to Q4 from top to bottom), and each column corresponding to annual and quarterly guidance respectively (from left to right). The "matrices" in the figure above are technically not matrices because the two cells in the last row are combined to reflect the equivalence of annual and quarterly guidance in the fourth quarter. "G" indicates that a management earnings forecast for the corresponding earnings measure has been issued during that fiscal quarter. See Table 1 for details on the construction of the earnings guidance sample.

Figure 3 – Descriptive Data on Earnings Guidance Patterns
<u>Panel A and B:</u> *Separately* Examining Patterns of Quarterly or Annual Earnings Guidance

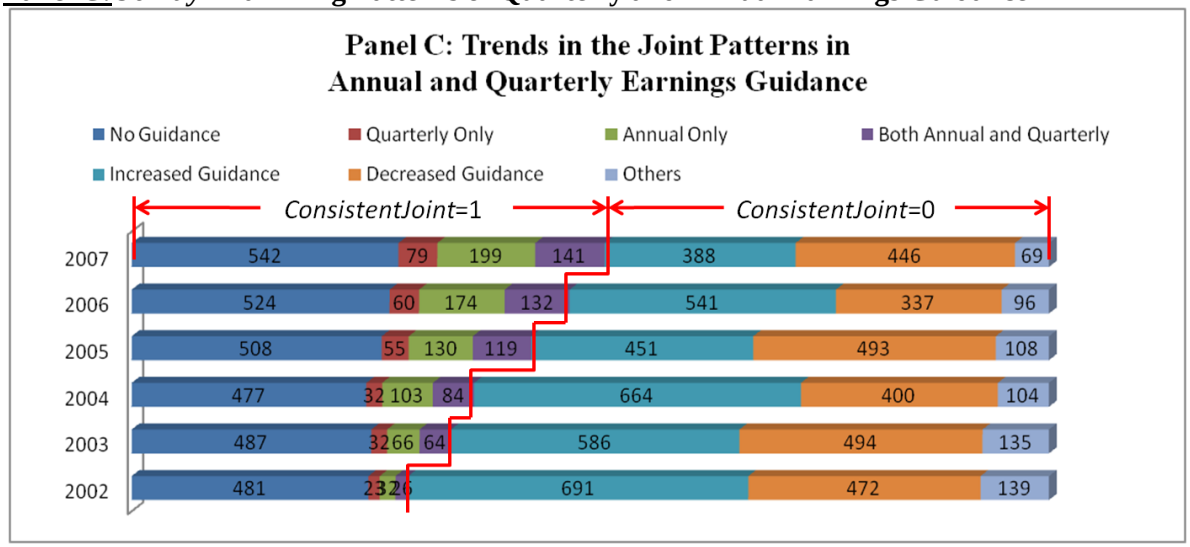


Notes: The figure is based on a sample of 1,864 U.S. public firms that issued at least one earnings guidance during the period of FY2001 to FY2007. Panel A only examines quarterly earnings guidance, with the exception that annual guidance in the fourth fiscal quarter is also considered as quarterly guidance. Guidance patterns are classified based on the scheme illustrated in Figure 1.



Notes: The figure is based on a sample of 1,864 U.S. public firms that issued at least one earnings guidance during the period of FY2001 to FY2007. Panel B only examines annual earnings guidance, with the exception that quarterly guidance in the fourth fiscal quarter is also considered as annual guidance. Guidance patterns are classified based on the scheme illustrated in Figure 1.

Figure 3 – Descriptive Data on Earnings Guidance Patterns (Cont'd)
<u>Panel C:</u> *Jointly* Examining Patterns of Quarterly and Annual Earnings Guidance



Notes: The figure is based on a sample of 1,864 U.S. public firms that issued at least one earnings guidance during the period of FY2001 to FY2007. The joint patterns of annual and quarterly earnings guidance are classified based on the scheme illustrated in Figure 2.

Table 1 – Earnings Guidance Sample Selection

	No. of Forecasts		
Initial sample from First Call CIG database*	**95,703**		
Non-EPS forecasts	(4,262)		
Currency not in USD	(729)		
Not issued by firms existent over full period	(29,894)		
Not issued between 2001Q1 and 2007Q4	(12,375)	**Quarterly**	**Annual**
Forecasts for my sample firms	**48,443**	**23,419**	**25,024**
Earnings warnings**	(7,340)		
Forecasts not for the current period	(5,077)		
Duplicate forecasts in each quarter	(5,121)	**Quarterly**	**Annual**
Final sample	**30,905**	**13,241**	**17,664**

Notes:

* The sample is based on the CIG file downloaded in 2008.

** I define earnings warnings as management earnings forecasts issued after 21 days before the end of the forecasted fiscal quarter, following Li et al. (2012)

Table 2 – Transition Matrix of Guidance Frequency and Guidance Consistency

Panel A: Quarterly Earnings Guidance

LagFreq\Freq	4	3	2	1	0	No. of Obs.	Consistent	% Consistent
4	**67%**	15%	6%	7%	4%	1,516	1,019	67%
3	42%	**23%**	13%	13%	9%	911	86	9%
2	19%	19%	**20%**	22%	20%	927	54	6%
1	4%	6%	9%	**49%**	32%	2,694	1,163	43%
0	1%	2%	4%	19%	**75%**	5,136	3,839	75%
Total	**14%**	**8%**	**8%**	**24%**	**46%**	**11,184**	**6,161**	**55%**

Panel B: Annual Earnings Guidance

LagFreq\Freq	4	3	2	1	0	No. of Obs.	Consistent	% Consistent
4	**72%**	13%	6%	5%	4%	2,179	1,565	72%
3	43%	**24%**	12%	10%	11%	1,145	95	8%
2	23%	21%	**17%**	18%	20%	1,042	52	5%
1	9%	8%	11%	**37%**	35%	2,044	592	29%
0	2%	4%	5%	16%	**73%**	4,774	3,478	73%
Total	**19%**	**10%**	**9%**	**18%**	**43%**	**11,184**	**5,782**	**52%**

Notes:

The table shows the transition matrix for guidance frequency changes in two consecutive years (*LagFreq* and *Freq*). 11,184 firm-year observations are divided into five rows based on *LagFreq*. Within each row, relative frequency (i.e. empirical probability) is calculated based on *Freq* in five columns. "Total" shows the relative frequency of *Freq*, unconditional on *LagFreq*. The distributions of the total number of observations, the number of consistent observations, and the ratio of the two, grouped by *LagFreq* are reported to the right of the transition matrix, to facilitate the comparison between the frequency-based and the consistency-based measures of guidance regularity.

Table 3 – Logistic Regression Research Design
Panel A: Summary Statistics of the Dependent and Independent Variables

Variable Name		N	Mean	Std. Dev.	Q1	Median	Q3
Dept. Var.	***Consistent***	9,320	0.57	0.49	0	1	1
(H1) Guidance History	***LagFreq***	9,320	1.24	1.47	0	1	2
	LagConsistent	9,320	0.53	0.50	0	1	1
(H2) Information Uncertainty	***RetVol***	9,116	0.03	0.01	0.02	0.02	0.03
	Disp	7,725	0.03	0.03	0.01	0.02	0.03
	EarnVol *(×1,000)*	8,907	0.49	1.28	0.02	0.10	0.37
(H3) Expectation Management	***CAR_EA***	3,660	0.01	0.10	-0.04	0.01	0.05
	MtBtAnalyst	3,714	0.81	0.31	0.67	1	1
	AnalystFollow	7,866	8.42	6.26	3.50	6.50	11.50
Operating Performance	***Loss***	9,320	0.22	0.38	0	0	0.25
	EarnIncrease	9,320	0.61	0.40	0.25	0.75	1
	AdjRet	9,111	0.12	0.57	-0.19	0.02	0.28
Corporate Events	***MnA***	9,320	0.08	0.28	0	0	0
	ExecTurnover	9,320	0.17	0.38	0	0	0
Alternative Guidance Motives	***Restate***	9,320	0.03	0.18	0	0	0
	ΔInsideTrade	9,320	0.15	0.21	0	0	0.25
	MtBtGuid	3,714	0.63	0.42	0	0.75	1
Other Control Variables	***Size***	9,313	6.77	1.97	5.35	6.72	8.10
	MktBk	9,309	2.87	2.85	1.45	2.18	3.44
	Leverage	9,313	0.51	0.24	0.32	0.51	0.67
	Litigation	6,922	0.29	0.45	0	0	1
	Regulation	6,922	0.19	0.40	0	0	0
	Beta	9,142	1.11	0.57	0.73	1.06	1.45

Notes:
See Appendix A for all variable definitions. The sample is a balanced panel of 9,320 observations of 1,864 unique firms over 2003~2007. Observations in 2001~2002 are dropped due to two years' guidance history required to calculate *LagConsistent*. *Consistent* is the dependent variable, followed by all independent variables. All continuous variables are winsorized at 1st and 99th percentiles.

Table 3 – Logistic Regression Research Design (Cont'd)
Panel B: Pearson Correlations between the Variables Used in the Logistic Regression

	Variable Name	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1)	*Consistent*																						
(2)	*LagFreq*	**-0.21**																					
(3)	*LagConsistent*	**0.39**	**-0.27**																				
(4)	*RetVol*	**-0.06**	**-0.14**	**-0.07**																			
(5)	*Disp*	**0.08**	**-0.17**	**0.07**	**-0.07**																		
(6)	*EarnVol*	**0.04**	**-0.15**	**0.05**	**0.39**	**0.05**																	
(7)	*CAR_EA*	0.03	0.00	-0.02	-0.02	-0.01	0.00																
(8)	*MtBtAnalyst*	**0.11**	**0.11**	**0.04**	**-0.04**	**-0.10**	**-0.04**	**0.29**															
(9)	*AnalystFollow*	0.01	**0.19**	-0.01	**-0.17**	**-0.05**	**-0.22**	-0.03	**0.11**														
(10)	*Loss*	**0.03**	**-0.22**	**0.02**	**0.51**	**0.08**	**0.31**	**-0.09**	**-0.14**	**-0.16**													
(11)	*EarnIncrease*	0.01	**0.03**	**0.04**	**-0.03**	**-0.10**	**-0.05**	**0.16**	**0.22**	**0.07**	**-0.23**												
(12)	*AdjRet*	-0.02	**-0.05**	0.01	**0.15**	0.00	-0.01	**0.41**	**0.19**	**-0.08**	**-0.05**	**0.23**											
(13)	*MnA*	0.00	0.00	-0.01	0.02	**-0.03**	-0.01	-0.03	0.01	0.02	0.01	0.00	-0.02										
(14)	*ExecTurnover*	**-0.02**	**0.04**	**-0.03**	**-0.13**	**0.05**	**-0.09**	**-0.05**	**-0.05**	**0.10**	**-0.05**	**-0.03**	**-0.09**	-0.01									
(15)	*Restate*	0.01	-0.01	-0.01	-0.01	0.01	0.00	-0.03	**-0.04**	0.00	0.02	**-0.03**	-0.02	-0.01	**0.03**								
(16)	*ΔInsideTrade*	**-0.04**	0.02	**-0.03**	**0.07**	-0.01	**0.03**	**-0.09**	-0.03	**-0.05**	**0.02**	**-0.02**	**-0.05**	0.01	0.01	**0.02**							
(17)	*MtBtGuid*	**0.05**	**0.04**	**0.04**	0.03	**-0.10**	**-0.03**	**0.08**	**0.33**	**0.05**	0.03	**0.14**	0.02	0.01	-0.01	-0.02	**0.06**						
(18)	*Size*	0.01	**0.17**	-0.01	**-0.56**	**0.22**	**-0.47**	**-0.05**	**0.05**	**0.53**	**-0.33**	**0.04**	**-0.11**	0.00	**0.21**	**0.04**	**-0.07**	**0.04**					
(19)	*MktBk*	0.00	**0.05**	**0.02**	-0.02	**-0.10**	0.00	**0.11**	**0.12**	**0.16**	**-0.04**	**0.10**	**0.22**	0.01	-0.01	**-0.04**	**-0.04**	**0.04**	**-0.05**				
(20)	*Leverage*	**0.08**	**-0.10**	**0.07**	**-0.21**	**0.23**	**-0.11**	-0.01	-0.02	-0.01	**-0.05**	0.00	-0.02	**-0.03**	**0.06**	**0.06**	**-0.02**	-0.01	**0.46**	**-0.02**			
(21)	*Litigation*	**-0.04**	**0.11**	**-0.04**	**0.24**	**-0.16**	**0.06**	-0.02	0.03	**0.24**	**0.17**	0.02	-0.01	0.02	0.00	0.02	0.01	**0.06**	**-0.15**	**0.11**	**-0.28**		
(22)	*Regulation*	**0.08**	**-0.19**	**0.10**	**-0.29**	**0.12**	**-0.11**	-0.01	-0.02	**-0.10**	**-0.12**	**-0.03**	**-0.03**	0.00	**0.02**	0.01	**-0.04**	0.00	**0.38**	**-0.13**	**0.47**	**-0.31**	
(23)	*Beta*	**-0.08**	**0.09**	**-0.09**	**0.20**	-0.02	**-0.15**	**0.06**	0.03	**0.04**	**0.12**	**0.07**	**0.17**	0.01	**0.04**	0.00	0.01	0.03	**0.06**	**0.08**	**-0.10**	**0.14**	**-0.13**

Notes:
Tabulated values are Pearson correlation coefficients of all pairs of variables in the logistic regressions. Bold face indicates significance at the 5% level under two-tailed tests.

Table 3 – Logistic Regression Research Design (Cont'd)
Panel C: Constructing Samples to Separately Examine Guidance Decreases and Increases

	Sample I Keep-or-Drop (Used in Table 4 & 5)	Sample II Keep-or-Increase (Used in Table 6)
Full Sample to Start with:	**9,320**	**9,320**
Exclude Guidance Increase (*Freq* > *LagFreq*)	(1,959)	
Exclude Guidance Decrease (*Freq* < *LagFreq*)		(1,701)
Exclude Non-Guidance (*LagFreq=0*)†	(3,199)	
Exclude Full-Guidance (*LagFreq=4*)‡		(959)
Sample I and Sample II before Data Constraints	**4,162**	**6,660**
Exclude Observations with Insufficient Data	(2,270)	(4,085)
Final Sample I and Sample II	**1,892**	**2,575**

Notes:
† This step excludes consistent non-guiders from Sample I.
‡ This step excludes consistent full-guiders from Sample II.
The starting sample is a balanced panel of 1,864 firms over 2003~2007 of 9,320 firm-year observations. I lose observations of 2001 and 2002 to calculate *LagConsistent*. Sample I ("Keep-or-Drop") is used in Table 4 & 5 to examine the determinants of guidance omissions as opposed to maintaining the same practice from the preceding year; therefore, Sample I is constructed by excluding two types of observations: (a) guidance increases, and (b) non-guidance. Sample II ("Keep-or-Increase") is used in Table 6 to examine the determinants of guidance increases as opposed to maintaining the same practice from the preceding year; therefore, Sample II is constructed by excluding two types of observations: (a) guidance decreases, and (b) full guidance. The reason why data constraints are more severe for Sample II is that a large portion of Sample II is consistent non-guiders, who are followed by fewer analysts and hence are more likely to have missing data on analyst-related variables.

Table 4 – Testing H1a: The Effect of *LagConsistent* on Subsequent Guidance Decreases
Sample: Sample I ("Keep-or-Drop"; Note: Consistent Non-guiders Excluded)
Model: Logistic Regressions

$$Consistent_{i,t} = \alpha_0$$
H1: Guidance history: $+ \alpha_1 LagFreq_{i,t} + \alpha_2 LagConsistent_{i,t}$
Information uncertainty: $+ \alpha_3 RetVol_{i,t-1} + \alpha_4 Disp_{i,t-1} + \alpha_5 EarnVol_{i,t}$
Expectation management: $+ \alpha_6 CAR\_EA_{i,t-1} + \alpha_7 MtBtAnalyst_{i,t-1} + \alpha_8 AnalystFollow_{i,t}$
Operating performance: $+ \alpha_9 Loss_{i,t-1} + \alpha_{10} EarnIncrease_{i,t-1} + \alpha_{11} AdjRet_{i,t-1}$
Corporate events: $+ \alpha_{12} MnA_{i,t-1,t} + \alpha_{13} ExecTurnover_{i,t-1,t}$
Alternative guidance motives: $+ \alpha_{14} Restate_{i,t-1} + \alpha_{15} \Delta InsideTrade_{i,t-1,t} + \alpha_{16} MtBtGuid_{i,t-1}$
Other control variables: $+ \alpha_{17} Size_{i,t-1} + \alpha_{18} MktBk_{i,t-1} + \alpha_{19} Leverage_{i,t-1}$
$+ \alpha_{20} Litigation_{i,t-1} + \alpha_{21} Regulation_{i,t-1} + \alpha_{22} Beta_{i,t-1}$

		Predicted	Model (1a)		Marginal	Excluding *LagFreq=4*		Marginal
		Sign	Coefficient	t-stat	Effects	Coefficient	t-stat	Effects
(H1) Guidance History	***LagFreq***	**+**	**0.60 *** **	**10.86**	**0.29**	**-0.32 *** **	**-2.82**	**-0.08**
	LagConsistent	**+**	**1.26 *** **	**10.26**	**0.31**	**1.58 *** **	**6.60**	**0.20 ‡**
Information Uncertainty	*RetVol*	-	-23.88 ***	-2.97	-0.07	-35.26 ***	-2.65	-0.06
	Disp	-	-11.71 ***	-3.67	-0.04	-5.58	-1.34	-0.01
	EarnVol	-	23.09	0.13	0.00	133.10	0.53	0.00
Expectation Management	*CAR_EA*	+	1.91 **	2.18	0.04	1.32	1.22	0.02
	MtBtAnalyst	+	0.60 **	2.55	0.04	0.37	1.24	0.02
	AnalystFollow	+	0.02	1.63	0.05	-0.01	-0.50	-0.01
Operating Performance	*Loss*	-	-0.81 ***	-2.81	-0.20 ‡	-1.01 **	-2.08	-0.13 ‡
	EarnIncrease	+	0.10	0.64	0.02	0.11	0.44	0.01
	AdjRet	+	0.14	0.81	0.01	-0.01	-0.02	0.00
Corporate Events	*MnA*	-	-0.21	-1.01	-0.05 ‡	0.07	0.20	0.01 ‡
	ExecTurnover	-	-0.25 *	-1.83	-0.06 ‡	0.06	0.27	0.01
Alternative Guidance Motives	*Restate*	?	0.25	0.88	0.06 ‡	0.88 **	2.17	0.11 ‡
	ΔInsideTrade	-	-0.26	-0.97	-0.02	0.10	0.22	0.00
	MtBtGuid	+	-0.14	-0.96	-0.03	-0.12	-0.54	-0.02
Other Control Variables	*Size*	+	-0.01	-0.17	-0.01	-0.03	-0.25	-0.01
	MktBt	-	-0.02	-0.65	-0.01	-0.02	-0.39	0.00
	Leverage	?	0.00	-0.01	0.00	-0.14	-0.23	-0.01
	Litigation	?	-0.07	-0.51	-0.02	0.01	0.03	0.00
	Regulation	?	-0.23	-1.01	-0.06 ‡	0.15	0.52	0.02 ‡
	Beta	?	0.15	1.06	0.02	-0.20	-0.89	-0.02
	Intercept	?	-2.22 ***	-4.10		0.19	0.21	
	No. of Observations		1,892			893		
	Pseudo R-squared		**27.68%**			**10.95%**		
Pseudo R-squared w/o LagConsistent			**23.09%**			**6.62%**		
Pseudo R-squared w/o LagFreq			**22.57%**			**10.14%**		
Pseudo R-sqaured w/o LagConsistent & LagFreq			**12.66%**			**5.36%**		

Notes: Results are based on pooled logistic regressions using Sample I – "Keep-or-Drop" (see Table 3 Panel C). See Appendix A for all variable definitions. T-statistics are based on standard error estimates that control for firm and year clustering effects. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively, under two-tailed tests. Marginal effects are the incremental likelihood of issuing consistent guidance in year *t*, based on moving from the first quartile to the third quartile of the independent variables, except for dummy variables with no inter-quartile variation, which are then based on moving from 0 to 1, indicated with ‡'s.

Table 5 – Testing H2a & H3a: Differential Determinants for Guidance Omissions Conditional on Past Guidance Regularity
Sample: Sample I ("Keep-or-Drop"; Note: Consistent Non-guiders Excluded)
Model: Logistic Regressions

$$Consistent_{i,t} = \alpha_0$$
H1: Guidance history: $+ \alpha_1 LagFreq_{i,t}$ $(+ \alpha_2 LagConsistent_{i,t})$
†H2: Information uncertainty: $+ \alpha_3 RetVol_{i,t-1} + \alpha_4 Disp_{i,t-1} + \alpha_5 EarnVol_{i,t}$
#H3: Expectation management: $+ \alpha_6 CAR\_EA_{i,t-1} + \alpha_7 MtBtAnalyst_{i,t-1} + \alpha_8 AnalystFollow_{i,t}$
Operating performance: $+ \alpha_9 Loss_{i,t-1} + \alpha_{10} EarnIncrease_{i,t-1} + \alpha_{11} AdjRet_{i,t-1}$
Corporate events: $+ \alpha_{12} MnA_{i,t-1,t} + \alpha_{13} ExecTurnover_{i,t-1,t}$
Alternative guidance motives: $+ \alpha_{14} Restate_{i,t-1} + \alpha_{15} \Delta InsideTrade_{i,t-1,t} + \alpha_{16} MtBtGuid_{i,t-1}$
Other control variables: $+ \alpha_{17} Size_{i,t-1} + \alpha_{18} MktBk_{i,t-1} + \alpha_{19} Leverage_{i,t-1}$
$+ \alpha_{20} Litigation_{i,t-1} + \alpha_{21} Regulation_{i,t-1} + \alpha_{22} Beta_{i,t-1}$

											Habitual=1			*Habitual=0*		
	Conditioning Variable		*LagConsistent=1*			*LagConsistent=0*			Difference		*LagFreq+Lag2Freq ≥ 6*			*LagFreq+Lag2Freq≤5*		Difference
		Predicted	Model (2a)			Model (3a)			(2a) - (3a)		Model (2a')			Model (3a')		(2a') - (3a')
		Sign	Coefficient	t-stat		Coefficient	t-stat		Coefficient	t-stat	Coefficient	t-stat		Coefficient	t-stat	Coefficient t-stat
(H1) Guidance History	*LagFreq*	+	0.20	1.86	*	0.79	11.28	***	-0.59	-4.63 ***	2.07	8.54	***	0.31	3.31 ***	1.76 6.79 ***
	LagConsistent	+									0.52	3.27	***	2.21	7.45 ***	-1.69 -5.02 ***
(†H2) Information Uncertainty	*RetVol†*	-	-25.99	-1.70	*	-22.00	-2.28	**	-3.99	-0.22	-15.82	-1.34		-30.82	-2.48 **	15.00 0.87
	Disp†	-	-13.94	-2.65	***	-10.91	-2.66	***	-3.03	-0.45	-12.07	-2.60	***	-11.22	-2.28 **	-0.86 -0.13
	EarnVol†	-	-220.20	-0.58		70.30	0.34		-290.50	-0.67	-240.90	-0.95		218.10	0.88	-459.00 -1.30
(#H3) Expectation Management	*CAR_EA#*	+	2.72	1.40		1.84	1.75	*	0.88	0.40	3.49	2.12	**	1.90	1.67 *	1.59 0.80
	MtBtAnalyst#	+	0.36	0.90		0.83	2.72	***	-0.47	-0.92	1.03	2.68	***	0.23	0.73	0.80 1.63
	AnalystFollow#	+	0.01	0.38		0.03	1.83	*	-0.02	-0.77	0.03	1.96	**	0.01	0.32	0.03 1.01
Other Control Variables			*INCLUDED*			*INCLUDED*			*INCLUDED*		*INCLUDED*			*INCLUDED*		*INCLUDED*
	Intercept	?	0.49	0.51		-2.79	-4.08	***	3.28	2.76 ***	-7.59	-6.52	***	-1.26	-1.48	-6.34 -4.40 ***
	No. of Observations		680			1,212					1,066			826		
	Pseudo R-squared		9.51%			19.37%					23.96%			13.12%		
Likelihood Ratio Test (all interactive terms)			Chi-Square = 42.137 (DF = 21) p-value =						0.0004 ***		Chi-Square = 126.648 (DF = 22) p-value <					0.0001 ***

Notes: Results are based on pooled logistic regressions using Sample I – "Keep-or-Drop" (see Table 3 Panel C). See Appendix A for all variable definitions. Samples are partitioned into regular and irregular guiders in two ways. In the left panel, the partitioning variable is *LagConsistent*. In the right panel, the partitioning variable is the *Habitual* dummy, which is based on the past two years' guidance frequency. Following Li et al. (2012), *Habitual =1* if a firm issued guidance for at least six out of the past eight quarters, and equals 0 otherwise. Model (2a, 2a') is estimated for regular guiders. Model (3a, 3a') is estimated for irregular guiders. Determinants with †'s are predicted in H2a to be significant in both Model (2a, 2a') and Model (3a, 3a'), whereas determinants with #'s are predicted in H3a to affect only firms in Model (3a, 3a'). The difference in the effect of guidance determinants between Model (2a, 2a') and Model (3a, 3a') is tested by estimating a single logistic regression with the partitioning variable interacting with other determinants. Coefficients and t-statistics of the interactive terms are reported. Likelihood ratio tests are also based on the single logistic regressions with interactive terms. T-statistics are based on standard error estimates that control for firm and year clustering effects. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels respectively, under two-tailed tests for t tests and under one-tailed tests for Chi-square tests. DF=degrees of freedom.

Table 6 – Testing H1b~H3b: The Effect of *LagConsistent* on Subsequent Guidance Increases
Sample: Sample II ("Keep-or-Increase"; Note: Consistent Full-guiders Excluded and Consistent Non-guiders Included)
Model: Logistic Regressions

$$Consistent_{i,t} = \alpha_0$$
H1: Guidance history: $+ \alpha_1 LagFreq_{i,t}$ $(+ \alpha_2 LagConsistent_{i,t})$
†H2: Information uncertainty: $+ \alpha_3 RetVol_{i,t-1} + \alpha_4 Disp_{i,t-1} + \alpha_5 EarnVol_{i,t}$
#H3: Expectation management: $+ \alpha_6 CAR\_EA_{i,t-1} + \alpha_7 MtBtAnalyst_{i,t-1} + \alpha_8 AnalystFollow_{i,t}$
Operating performance: $+ \alpha_9 Loss_{i,t-1} + \alpha_{10} EarnIncrease_{i,t-1} + \alpha_{11} AdjRet_{i,t-1}$
Corporate events: $+ \alpha_{12} MnA_{i,t-1,t} + \alpha_{13} ExecTurnover_{i,t-1,t}$
Alternative guidance motives: $+ \alpha_{14} Restate_{i,t-1} + \alpha_{15} \Delta InsideTrade_{i,t-1,t}$
Other control variables: $+ \alpha_{17} Size_{i,t-1} + \alpha_{18} MktBk_{i,t-1} + \alpha_{19} Leverage_{i,t-1}$
$+ \alpha_{20} Litigation_{i,t-1} + \alpha_{21} Regulation_{i,t-1} + \alpha_{22} Beta_{i,t-1}$

			Full Sample			*LagConsistent=1*		*LagConsistent=0*		Difference	
		Predicted	Model (1b)		Marginal	Model (2b)		Model (3b)		Model (2b) - (3b)	
		Sign	Coefficient	t-stat	Effects	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
(H1) Guidance History	*LagFreq*	+	-0.82 ***	-14.91	-0.20	-0.69	-6.80 ***	-0.88	-13.06 ***	0.18	1.50
	LagConsistent	+	0.83 ***	8.49	0.21						
(†H2) Information Uncertainty	*RetVol†*	+	-20.85 ***	-3.73	-0.07	-37.70	-3.90 ***	-12.70	-1.87 *	-25.00	-2.12 **
	Disp†	+	5.61 ***	3.24	0.03	6.02	2.18 **	5.22	2.31 **	0.80	0.22
	EarnVol†	+	89.35	0.81	0.00	222.20	1.24	23.77	0.16	198.43	0.86
(#H3) Expectation Management	*CAR_EA#*	-	-0.42 **	-2.14	-0.05	-0.43	-1.44	-0.43	-1.66 *	-0.01	-0.02
	MtBtAnalyst#	-	0.32	0.38	0.01	-0.79	-0.60	1.25	1.12	-2.03	-1.18
	AnalystFollow#	-	0.01	0.99	0.02	0.01	0.32	0.02	1.21	-0.01	-0.52
Other Control Variables			*INCLUDED*			*INCLUDED*		*INCLUDED*		*INCLUDED*	
No. of Observations			2,575			1,170		1,405			
Pseudo R-squared			23.41%			7.88%		18.62%			
Pseudo R-squared w/o LagConsistent			21.09%								
Pseudo R-squared w/o LagFreq			15.18%								
Pseudo R-sqaured w/o LagConsistent & LagFreq			7.25%								
Likelihood Ratio Test (all interactive terms)						Chi-square = 18.375	(DF = 20)	p-value =		0.5627	

Notes: Results are based on pooled logistic regressions using Sample II – "Keep-or-Increase" (see Table 3 Panel C). See Appendix A for all variable definitions. Determinants with †'s are predicted in H2b to be significant in both Model (2b) and Model (3b), whereas determinants with #'s are predicted in H3b to affect only firms in Model (3b). The difference in the effect of guidance determinants between Model (2b) and Model (3b) is tested by estimating a single logistic regression with *LagConsistent* interacting with other determinants. Coefficients and t-statistics of the interactive terms are reported. Likelihood ratio tests are also based on the single logistic regressions with interactive terms. T-statistics are based on standard error estimates that control for firm and year clustering effects. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively, under two-tailed tests. Marginal effects are the incremental likelihood of issuing consistent guidance in year *t*, based on moving from the first quartile to the third quartile of the independent variables. DF=degrees of freedom.

Table 7 – Guidance Timing and Format of Consistent Guiders versus Inconsistent Guiders

			Consistent Guiders	Inconsistent Guiders			
		No. of Forecasts	4,713	8,528			
		No. of Firms	280	1,108			
		Variables	Mean	Mean	Diff	t-stat	
Timing	Variance	*VarEAD*	111.14	169.22	-58.08	-2.39	**
		VarHorizon	128.80	173.75	-44.96	-3.28	***
	Mean	*MeanBundled_EAD*	86.60%	79.05%	7.55%	3.79	***
		MeanEAD	3.24	4.61	-1.37	-1.81	*
		MeanHorizon	60.90	57.34	3.56	4.73	***
Format	Variance	*VarPrec*	0.12	0.32	-0.21	-4.17	***
	Mean	*MeanNoSurp*	49.24%	38.42%	10.82%	5.16	***
		MeanPrec	3.09	2.98	0.11	2.47	**

Notes:
***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively, under two-tailed tests.
This table only reports the results of quarterly earnings guidance. Results on annual earnings guidance is similar and is available from the author upon request. Consistent guiders are defined as firms issuing consistent joint guidance patterns (both annual and quarterly guidance) for at least 3 consecutive years over the 7-year sample period.
Variable definitions: Prefix *Var-* and *Mean-* refer to the firm level variance and mean. Guidance timing variables are defined as follows: *EAD* is the number of days between guidance date and the previous quarter's earnings announcement date; *Horizon* is the number of days between guidance date and the forecast period end date; *Bundled_EAD* is a dummy variable that is set to one if *EAD* is zero or one. Guidance Format variables are defined as follows: *Prec* is a discrete measure of the precision of guidance format, which takes value of 1 (qualitative), 2 (min, max), 3(range), and 4 (point); *NoSurp* is a dummy variable if a guidance is classified as in line with market concurrent consensus by First Call.