

# **An Empirical Examination of the Commitment to Increased Disclosure**

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I examine the relation between a corporate commitment to increased disclosure and measures of liquidity, information asymmetry, and cost of equity capital. Relative to prior research on voluntary disclosure, I use a composite, *ex ante* measure of commitment based in social psychology and measure commitment using characteristics of earnings announcement disclosures. Prior to Regulation Fair Disclosure (Reg FD) I find that commitment to increased disclosure is negatively related to bid-ask spreads, probability of informed trade (PIN) scores, and implied cost of capital estimates. Further analysis reveals that the disclosure of balance sheet information in earnings releases is significantly related to spreads and PINs, regardless of firms' conference call behavior, while the combination of consistent open calls and disclosure of balance sheet information in earnings releases yields the most significant results for cost of capital. After the effective date of Reg FD I find that commitment is negatively related to PIN scores and implied cost of capital estimates, but not related to bid-ask spreads. Further analysis reveals that the disclosure of balance sheet information in earnings releases is significantly related to PINs and cost of capital, regardless of firms' conference call behavior.

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## 1. Introduction

I investigate the relation between a firm's commitment to increased disclosure and three capital market outcomes: liquidity, information asymmetry, and cost of capital.<sup>1</sup> I follow research in social psychology and measure commitment as a function of consistency, distinctiveness, and consensus (Kelley [1972]; Koonce and Mercer [2005]). Consistency (over time) concerns the temporal stability or regularity of disclosure choices; consistency (across modalities) concerns the choice of disclosure channel; distinctiveness captures whether the firm discriminates among classes of disclosure recipients; and consensus is related to other firms' disclosure choices. A firm is committed to increased disclosure, based on these criteria, if its disclosure choices are consistent, are not distinct, and have low consensus (i.e., are not same as other firms'). I derive my measures of consistency, distinctiveness, and consensus from the characteristics of earnings conference calls and earnings press releases and I provide evidence on the liquidity, information asymmetry, and cost of capital effects of commitment to increased disclosure.

An extensive empirical literature investigates the capital market consequences of disclosure with mixed results. The primary focus of prior research has been the effects of disclosure on measures of information asymmetry (see Healy and Palepu [2001] for a review). Because both voluntary disclosure and its capital market effects are difficult to capture, studies have used different measures for both constructs (disclosure and its effects) and have tested for a relation between them in widely varying settings. Based on prior research, I use three measures to capture liquidity, information asymmetry, and cost of capital – bid-ask spreads, probability of informed trade (PIN) scores, and implied cost of capital estimates, respectively. Relative to other studies that measure commitment either implicitly as currently observed disclosure choices or explicitly through the adoption of more stringent accounting standards, my research puts forward a theory-based, *ex ante* measure of the commitment to increased disclosure. Guided by research on attribution theory in social psychology, I assume that investors ascribe commitment to firms that exhibit a certain pattern of disclosure characteristics or indicators. I aggregate

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<sup>1</sup> Firms can also commit to *decreased*, or *unchanged*, disclosure. I test for the consequences of a commitment to *decreased* disclosure in time series tests of firms that switch from open calls to closed calls.

the indicators of disclosure behavior into a bundled or aggregate measure of disclosure commitment. Specifically, I use characteristics of earnings announcement disclosures to identify firms whose disclosure behavior would be predicted, based on attribution theory, to be motivated by an internal, stable factor (that doesn't change over time), rather than situational incentives or prevailing circumstances (that do change over time, depending on the realization of time-period-specific events). I focus on earnings announcements and earnings conference calls because they are value-relevant disclosures made with the objective of reducing information asymmetry among investors and because *characteristics* of such disclosures are appropriate inputs to my measure of *commitment*.

My analysis is based on two samples, covering 1999-2000 and 2003-2004, the pre- and post-Regulation Fair Disclosure (Reg FD) periods. Reg FD prohibits selective disclosure of material nonpublic information; information must be disseminated publicly once it is disclosed selectively. Before this regulation, firms could host either closed conference calls, open conference calls, or none at all. Closed calls were restricted to invited participants while open calls were available (for listening, at least) to anyone. Although Reg FD did not mandate that firms host earnings calls, it *did* eliminate the choice between open and closed calls starting in October 2000. Because my research requires a measure for the degree of openness, I use different measures for this construct before versus after Reg FD.

Reg FD's intention is to reduce information asymmetry among investors by, in effect, mandating a commitment to increased disclosure. I expect less cross-sectional variation in the degree of disclosure commitment, and less value to disclosure commitment, after the regulation. Empirically, the result should be manifest in capital market effects that are statistically weaker and economically smaller in magnitude.

For the 1999-2000 sample (pre-Reg FD), I measure distinctiveness as whether the call was open to all participants and I measure consistency across modalities as the level of financial statement detail included in earnings releases. To capture consistency across time, I partition the sample based on whether the firm consistently (each quarter) hosts calls. For the 2003-2004 sample (post-Reg FD) I measure distinctiveness as the degree of conference call "openness", based on the number of minutes devoted to the discussion portion of the conference call. Because of the increasing prevalence of conference calls, I

consider the pre-Reg FD period a low consensus period and the post-Reg FD period a high consensus period. In additional tests, I also allow for cross-sectional variation in consensus in the pre-Reg FD period.

I expect that firms that are committed to increased disclosure via consistently hosting conference calls (consistency across time), furnishing detailed financial statement information in earnings releases (consistency across modalities), and being open (low distinctiveness) – particularly in the pre-Reg FD period (low consensus) – will have higher liquidity and lower information asymmetry and cost of capital than other firms. Prior to Regulation Fair Disclosure (Reg FD), I find that commitment is positively related to liquidity, and negatively related to measures of information asymmetry and cost of equity capital. Further analysis reveals that balance sheet disclosure is significantly related to spreads and PINs, regardless of firms' conference call behavior, while the combination of consistent open calls and disclosure of balance sheet information yields the most significant results for cost of capital. After the effective date of Reg FD, I find that commitment is negatively related to measures of information asymmetry and cost of equity capital, but not related to liquidity. Further analysis reveals that balance sheet disclosure is significantly related to PINs and cost of capital, regardless of firms' conference call behavior.

I contribute to the literature on disclosure in three ways. First, in the spirit of Koonce and Mercer [2005], I use theory from social psychology to create a composite, *ex ante* measure of firms' disclosure choices, relative to studies measuring one aspect of disclosure such as consistency. In particular, I provide evidence using two distinct measures of disclosure at earnings announcements, conference call openness and the inclusion of financial statements in earnings releases, showing the relation between the two, their relative impacts on measures of liquidity, information asymmetry, and cost of capital, and their interaction with one another in indicating commitment. This is in contrast to studies that measure disclosure using one mode only (e.g., conference calls), measure disclosure using different measures independently (e.g., conference calls and management forecasts separately), or measure disclosure using a single, overall measure (e.g., AIMR scores or self-constructed annual report scores). Second, I am able to

make different predictions with regard to the consequences of commitment before and after a significant regulatory change to the disclosure environment – Regulation Fair Disclosure. In particular, I predict and find that, consistent with Reg FD’s intention to reduce information asymmetry among investors, there is more value to commitment before Reg FD than after Reg FD. Third, I am able to identify *significant changes* in disclosure policies through transitions from closed calls to open calls, and vice versa. I can therefore assess the capital market consequences of disclosure commitment using a time-series design to supplement and validate cross-sectional results.

## 2. Literature Review and Hypothesis Development

Analytical research predicts a negative relation between the commitment to increased disclosure and cost of capital, through the effect on liquidity (see, for example, Diamond and Verrecchia [1991]).<sup>2</sup> Specifically, information asymmetries between buyers and sellers of firms’ shares give rise to adverse selection costs, which are reflected in the firm’s cost of capital. As firms commit to more disclosure, information asymmetries decrease, and buyers and sellers are more willing to transact in the firm’s shares, which is reflected in a lower cost of capital and higher level of liquidity. Empirical research documents mixed results concerning this relation, particularly with regard to cost of capital effects.<sup>3</sup> Extant research typically uses one of three measures of disclosure – analyst ratings of overall disclosure, self-constructed annual report disclosure scores, or separate analyses of different disclosure channels. For example, with regard to analyst ratings, Sengupta [1998] finds the predicted negative relation between AIMR disclosure scores and cost of debt capital, while Botosan and Plumlee [2002] find no relation between either overall AIMR disclosure scores or investor relations AIMR disclosure scores and cost of equity capital. In

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<sup>2</sup> Theoretical research (e.g., Kim and Verrecchia [1994]) also predicts a positive relation between disclosure and cost of capital. But, as discussed in Verrecchia [2001], these models “typically speak to a type of transitory behavior that may arise around a brief window of an anticipated disclosure...and not to commitments to greater disclosure over longer windows” (p. 172). Because my research is specifically examining commitment (which is an ex ante decision and not transitory) theories predicting a positive relation between disclosure and cost of capital are not applicable to my paper.

<sup>3</sup> Appendix A provides examples of measures of disclosure and consequences. Only two of the studies cited specifically mention the notion of *commitment*. The summary is included to indicate the diversity of research in this area.

addition, Botosan and Plumlee [2002] and Brown and Hillegeist [2007] find that quarterly AIMR disclosure scores are *positively* associated with cost of equity capital and PIN scores, respectively. With regard to self-constructed scores, Botosan [1997] finds the predicted negative relation between disclosure and cost of equity capital, but only for firms with low analyst following. Francis, Nanda, and Olsson [2007] find no relation between their self-constructed annual report disclosure score and cost of equity capital, after controlling for earnings quality.

Research also measures the capital market effects of *different channels* of voluntary disclosure – including conference calls, management forecasts, press releases, and annual reports -- separately. For example, Brown, Hillegeist, and Lo [2004] show that committing to a policy of regularly holding conference calls, as measured by the existence of a call in the current and previous quarter, is associated with a reduction in information asymmetry as measured by the probability of informed trade (PIN). Coller and Yohn [1997] find that management forecasts reduce the bid-ask spread, and Chen, Matsumoto, and Rajgopal [2006] find that a firm's announcement to stop earnings guidance is associated with negative returns in the announcement period.<sup>4</sup> On the other hand, Francis, Nanda, and Olsson [2007] find a *positive* relation between management forecast frequency and cost of equity capital, a *positive* relation between conference call frequency and cost of equity capital, and *no* relation between press release frequency and cost of equity capital. Although most of these studies do not explicitly state that their intention is to measure commitment (with the notable exception of Leuz and Verrecchia [2000], discussed below), they implicitly assume that by measuring disclosure quality, they are capturing a realization of a disclosure policy, and thus capturing the *outcome* of commitment.

Two studies explicitly measure *commitment* to disclosure as the adoption of certain accounting standards. Leuz and Verrecchia [2000] find that voluntary adoption of International Accounting Standards (IAS) or United States GAAP is negatively related to bid-ask spread and positively related to volume for a small sample of German firms. Bartov and Bodnar [1996] study firms that choose more

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<sup>4</sup> The latter result is interpreted by the authors as evidence consistent with a negative relation between disclosure and the cost of capital. By stopping guidance, a firm is committing *not* to disclose which increases the cost of capital and leads to the negative price reaction.

informative accounting methods, proxied by choice of functional currency, and find that firms with greater information asymmetry, as proxied by the bid-ask spread and volume, are more likely to commit to more informative accounting methods. It is this *commitment* to increased disclosure that theory predicts will reduce cost of capital through its effect on liquidity.

I apply theory from social psychology to identify disclosure choices that represent a *commitment* to increased disclosure. A commitment is by definition an *ex ante* decision, before specific outcomes are known, and thus represents a policy. Studies that measure specific voluntary disclosures in levels (without consideration of *prior* disclosure choices) or in isolation (without consideration of *other* contemporaneous disclosure choices) are less likely to capture commitment because to the extent these disclosures are conditional on current information (situational incentives) they are less likely to represent a disclosure *policy*. I identify conditions under which current disclosure choices can be attributed to a stable factor residing within the firm, as opposed to being attributed to current circumstances or situational incentives. Assuming firm characteristics remain relatively stable, current disclosure choices that represent a commitment will be a reliable predictor of future disclosure choices, while disclosures attributed to current circumstances have no implication for the future. In these cases, current disclosure choices are not a reliable predictor for future disclosure choices because future disclosures will depend on changing circumstances. I identify conditions exhibiting commitment by applying the covariation principle from social psychology and using the covariation information categories of consistency, distinctiveness, and consensus, discussed in Section 3.

In summary, research in social psychology predicts that an increase in disclosure can be viewed as a commitment to disclosure *only* when certain conditions are met. This is in contrast to other studies that measure disclosure in levels or changes without consideration of prior disclosure choices or other contemporaneous disclosure choices. I measure commitment using characteristics of firms' disclosure choices at quarterly earnings announcements – earnings conference calls and earnings press releases -- and assume that the covariation principle (discussed in Section 3) captures the features of the disclosure

setting. I therefore test the following hypothesis that commitment is related to certain capital market outcomes (stated formally, in alternative form):

*Hypothesis:* Information asymmetry and cost of capital are decreasing, and liquidity is increasing, in a firm's commitment to increased disclosure.

My research is related to three prior studies. First, Healy, et al. [1999] identify a sample of firms whose AIMR disclosure scores increased (and did not subsequently decrease) during the 1980s. From this sample of disclosure score increases, they choose the year of the largest increase per firm and assess capital market consequences before and after the change in score. They find that firms with such "sustained increases in disclosure" experience increases in returns, liquidity, analyst following, and institutional ownership. One difficulty in attributing their results to the disclosure increase itself is the relatively long window (one year) over which disclosure is measured. My study is distinct from theirs in that I focus on changes in *specific* voluntary disclosures whereas they analyze changes in analyst perceptions of disclosure. I also explore different measures of capital market consequences (e.g., PIN scores and Value Line cost of capital) and measure disclosure change over a shorter window (in time series tests).

Second, Leuz and Verrecchia [2000] capture the commitment aspect of disclosure using German firms' switch to U.S. GAAP or IAS. They find that bid-ask spread is lower, and volume is higher, for committing firms than for firms that don't commit. They also find that the spread decreases, and volume increases, after the switch to more stringent accounting standards. The setting I examine is more generalizable to U.S. firms and also uses firms' current disclosure choices to assess commitment as opposed to a one-time switch to more stringent accounting standards. With such policy shifts, it is difficult to determine whether the results are attributable to the commitment to increased disclosure, or to other structural changes within the firm. My measure is less susceptible to this problem because, while my measure captures a change in disclosure policy, it is less likely to be associated with other policy changes (such as cross-listing in the Leuz and Verrecchia study). My results, which show that commitment to increased disclosure is associated with measures of liquidity, information asymmetry, and

cost of equity capital for a sample of U.S. firms, also challenge Leuz and Verrecchia's assertion that the disclosure environment in the U.S. is too rich to empirically detect the capital market consequences of "largely incremental" disclosure changes (p. 92).

Third, Brown, et al. [2004] test the relation between conference calls and information asymmetry using cross-sectional and time-series designs. They find that the probability of informed trade (PIN) is increasing in the number of conference calls. In addition, they find that PIN decreases following conference call initiations. While they capture consistency in their time-series design by focusing on conference call initiations that are followed up with subsequent calls, they do not capture consensus, distinctiveness, or consistency across modalities. My study adds to theirs by employing a measure for commitment which incorporates these additional attributes.

### *3. Choice & Measurement of Test Variables*

In this section, I discuss the choice and construction of my test variables. I begin by motivating my choice of earnings announcement disclosures (section 3.1), followed by a discussion of the covariation principle and how it relates the construction of commitment variables (section 3.2). I conclude by discussing measures of capital market outcomes (section 3.3), and the process of distinguishing the portions of post-Reg FD openness subject to management discretion as opposed to analyst demand (section 3.4).

#### 3.1 Earnings Announcement Disclosures

As noted in Schrand and Verrecchia [2005] and elsewhere, a disclosure will mitigate adverse selection problems among investors only if it conveys value-relevant information to investors who would otherwise be uninformed, and in the absence of such disclosure, some (other) investors would have access to the information. I consider characteristics of quarterly earnings announcement disclosures as appropriate inputs to my measure of commitment for several reasons. First, the increasing value-relevance and information content of such disclosures has been documented by academic research (see, for example, Francis, Schipper, and Vincent [2002]). This is in contrast to the information content of 10-

Q and 10-K filings, whose disclosures typically follow (and are thus partly subsumed) by earnings announcement disclosures (see, for example, Stice [1991]). Second, voluntary disclosures in earnings announcements are likely made with the intention of reducing information asymmetry. Third, while earnings announcements are not required by the Securities and Exchange Commission (SEC), they are required by the NYSE and NASDAQ. Therefore, the earnings announcement itself is less susceptible to self-selection concerns than management forecasts (because only a subset of firms issue forecasts) and AIMR scores (because analysts only rank firms with certain characteristics). In addition, AIMR scores were discontinued in 1996.

Within the context of earnings announcements, I focus on two disclosure mechanisms – earnings conference calls and the inclusion of financial statements in earnings releases – for the following reasons. With regard to earnings conference calls, Frankel, Johnson, and Skinner [1999] show that conference calls convey material information, as evidenced by increased return volatility and trading volume during the call. In addition, Bushee, Matsumoto, and Miller [2003] show that open earnings calls are associated with greater numbers of small trades and price volatility than closed calls. With regard to the inclusion of financial statements in earnings releases, Francis, Schipper, and Vincent [2002] show that the increased usefulness of earnings announcements over time is due largely to firms' increased propensity to voluntarily disclose detailed income statements in earnings press releases. In addition, Chen, DeFond, and Park [2002] report results consistent with firms disclosing balance sheets in earnings releases in response to “investor demand for value relevant information to supplement earnings” (p. 229). I analyze earnings announcement disclosures in the form of conference calls and press releases because they are value-relevant disclosures made with the objective of reducing information asymmetry among investors; I consider characteristics of these disclosures as appropriate inputs to my measure of commitment.

### 3.2 Measuring Commitment: Attribution Theory and the Covariation Principle

Attribution theory is a branch of social psychology that analyzes the perceived causes of behavior.<sup>5</sup> (My research uses attribution theory as a guide to *infer* investor perceptions of the causes of firms'

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<sup>5</sup> An accessible and informative review of attribution theory is found in Forsterling [2001].

disclosure behaviors.) I illustrate attribution theory with the following example. When confronted with a behavior, or an “effect” (Person A shares personal information with Person B), attribution theory attempts to find the perceived underlying cause of the effect (Is Person A simply a transparent person? Is Person B a close friend? Were there special circumstances that caused this disclosure?) Heider [1958], often referred to as the “father of attribution theory”, suggests multiple observations of the variation of effects are necessary to make attributions. In particular, it is necessary to determine the presence or absence of an effect with: 1) the presence or absence of the object (Does Person A share only with *Person B*?); 2) different states or classes of the object (Does Person A share with Person B only in *certain situations*?); and 3) different persons (Do *other people* also share with Person B?); where “object” is defined as the condition, or target, with which the behavior is associated (or, alternatively, the target at which the behavior is directed). In this example, Person B is the object, or target, and Person A is the sender.

Kelley [1967, 1973] cast Heider’s theory in the framework of the analysis-of-variance (ANOVA) model, introducing the term “covariation principle”. The covariation principle states that “an effect is attributed to one of its possible causes with which, over time, it covaries” (Kelley [1973], p. 108). He suggested that behaviors can be attributed to the person exhibiting the behavior, the object (or target), or the circumstances. He also defined “information categories” for each of these attributions – consensus, distinctiveness, and consistency. Consensus concerns whether an effect covaries with persons (or senders); distinctiveness concerns whether an effect covaries with objects (or targets); and consistency concerns whether an effect covaries with circumstances. In the previous example, Person A shares personal information with Person B. If hardly anyone else shares personal information with Person B (low consensus); Person A also shares personal information with Person C (low distinctiveness); Person A shares personal information with Person B over the phone and in person (high consistency across modalities); and in the past, Person A has always shared personal information with Person B (high consistency across time); then a “person”, or internal, attribution is likely. In contrast, suppose that everyone shares with Person B (high consensus) and Person A shares *only* with Person B and no one else (high distinctiveness). In this case, an “entity”, or external, attribution is likely. Finally, assume either

that in the past, Person A has not shared with Person B (low consistency across time), or Person A shares with Person B only through letter-writing (low consistency across modalities). In this case, a “circumstance” attribution is likely. I associate the “person” attribution with commitment because, unlike the other attributions, it is not attributable to circumstances, target, or modality. Therefore, because the behavior is attributable to stable qualities of the person, it is expected to continue in the future, *regardless of changes in circumstances, target, or modality*. Orvis, Cunningham, and Kelley [1975] summarize the following conditions under which unambiguous attributions are derived:

<i>Attribution</i>	<i>Consensus</i>	<i>Distinctiveness</i>	<i>Consistency (Over Time &amp; Modalities)</i>
Object/Target	High	High	High
Sender ( <b>Commitment</b> )	Low	Low	High
Circumstance	Low	High	Low

To summarize, when consistency is high, consensus is low, and distinctiveness is low, the behavior of actors is expected to be attributed (by others) to a *stable factor residing within that person*, as opposed to the *object* or the *circumstances*.<sup>6</sup> I interpret this stable, personal attribution as representing commitment and relate these concepts to voluntary disclosure choices in the following sections.

### **3.2.1 Distinctiveness: Conference Call “Openness”**

As discussed previously, a disclosure can be internally attributed (and thus, considered a commitment) if, in combination with other covariation information, it exhibits *low distinctiveness*, which concerns the covariation of an effect with different objects, or targets. In the case of disclosures made in conference calls, I define the “object”, or “target”, as the *collection of disclosure recipients*, including

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<sup>6</sup> Koonce and Mercer [2005] provide the following example, applying the concept of “information categories” to voluntary disclosure. In 2002, General Electric began providing additional disclosures in its annual report. If, at the same time, GE began issuing earnings forecasts, the increase in disclosure is not distinct (with respect to these two forms of disclosure). If other firms are not also increasing disclosures in their annual reports, then the increase is characterized by low consensus. If GE maintains the increase in disclosure in the next reporting period, then the increase exhibits high consistency. These three characteristics in combination would qualify GE’s increase in disclosure as a commitment.

analysts, institutional investors, individual investors, and potential investors – those invited to listen and/or ask questions and those not invited to listen and/or ask questions.<sup>7</sup> Disclosure behavior that differs (does not differ) across recipients exhibits high (low) distinctiveness, consistent with an internal attribution, or commitment. Before Reg FD, I measure openness as an indicator variable, *Open*, equal to 1 if the conference call is open and 0 otherwise.<sup>8</sup> An open call doesn't differentiate across recipients, and the disclosure exhibits low distinctiveness. If a call is closed, the firm does differentiate across recipients (i.e., the firm discloses different (more) information to selected market participants), and the disclosure exhibits high distinctiveness.<sup>9</sup>

After Reg FD, all market participants can *listen* to conference calls, which are typically webcast and are announced approximately one week ahead of time. Within these open calls, firms can still discriminate among recipients. For example, Mayew [2007] shows that managers select which participants may *ask* questions and the *order* of such questions. After Reg FD, I measure openness using two related measures. First, *QA\_Min* is the number of minutes devoted to questions and answers. Making the call more interactive changes the amount and type of information disclosed. For example, if market participants have heterogeneous information needs, and some of these participants are allowed to ask questions while others are not, then the participants that asked and received answers had their unique information needs met while others did not, and thus, the firm's disclosure exhibits distinctiveness.

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<sup>7</sup> This interpretation of distinctiveness differs from that of Koonce and Mercer [2005], discussed in footnote 6. Koonce and Mercer define the object, or target, as the disclosure medium itself, and capture distinctiveness by whether disclosure behavior differs across disclosure media. I define the object as the target at which the disclosure is directed because the activity (disclosure) has a specific target (the public), and because my interpretation of consistency across modalities incorporates different disclosure media. I include Koonce and Mercer's measure of distinctiveness under a different heading (consistency across modalities) and I add a measure of the degree of openness (distinctiveness).

<sup>8</sup> Potentially finer measures of pre-Reg FD distinctiveness include the number of analysts invited to participate in closed calls and the number of minutes devoted to the discussion portion of open calls. Due to data limitations, I am able to classify calls only as open or closed.

<sup>9</sup> This interpretation is also consistent with results reported in Bushee, et al. [2004]. They find that closed call firms are more likely than open call firms to discontinue calls after Reg FD. Therefore, open call firms are more committed to disclosure.

Second, I measure the discretionary portion of  $QA\_Min - Disc\_QA$ , as the residual from a regression of  $QA\_Min$  on proxies for analyst demand. This measure is discussed in Section 3.4.<sup>10</sup>

### **3.2.2 Consistency across Modalities: Level of Financial Statement Detail in Earnings Releases**

As discussed previously, a firm's disclosure behavior must exhibit high consistency if it is to be internally attributed. One aspect of consistency concerns over time behavior, which is measurable based on a firm's time series of disclosures as discussed in Section 3.2.3. In contrast, consistency across modalities pertains to the different ways in which the "effect" interacts with the "object/target". In my setting, the "effect" is the disclosure of value-relevant information. I consider both earnings conference calls and earnings announcement press releases as modalities for this disclosure. I view firms that both host conference calls *and* report a relatively high proportion of financial statement line items in their earnings releases as more committed to disclosure because it exhibits high consistency across disclosure modalities. I measure the level of financial statement detail in earning releases as the ratio of disclosed financial statement items (in the earnings release) to potentially "disclosable" financial statement items (as determined by the firm's subsequent 10-Q filing).<sup>11, 12</sup> Specifically, following D'Souza, Ramesh, and Shen [2006], ratios based on the earnings release disclosure of financial statement information are defined as follows:

$$\text{Balance Sheet Ratio} = \frac{\text{Number of Balance Sheet Line Items Disclosed in Earnings Release}}{\text{Number of Balance Sheet Line Items Disclosed in 10-Q}}$$

$$\text{Income Statement Ratio} = \frac{\text{Number of Income Statement Line Items Disclosed in Earnings Release}}{\text{Number of Income Statement Line Items Disclosed in 10-Q}}$$

$$\text{Cash Flow Ratio} = \frac{\text{Number of Statement of Cash Flow Line Items Disclosed in Earnings Release}}{\text{Number of Statement of Cash Flow Line Items Disclosed in 10-Q}}$$

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<sup>10</sup> A potentially better measure for distinctiveness is whether earnings call transcripts are posted on firm websites. I do not use this measure for two reasons. First, based on a cursory review of company websites, many firms do not post archived transcripts dating to the 2003 – 2004 time period. Second, these data are not available in machine-readable form for large samples.

<sup>11</sup> National Investor Relations Institute [2004] recommends that firms include a complete balance sheet and a complete income statement in their earnings releases.

<sup>12</sup> The specific financial line items considered in the determination of potentially disclosable items are presented in Appendix B along with other choices in the selection of the sample.

$$\text{Total Ratio} = \frac{\text{Number of Financial Statement Line Items Disclosed in Earnings Release}}{\text{Number of Financial Statement Line Items Disclosed in 10-Q}}$$

Data for the numerators are the number of non-missing data items from Compustat’s “Preliminary History” database. Data for the denominators are the number of non-missing data items from Compustat’s “As First Reported” database. The “Preliminary History” database collects data from firms’ earnings announcements and the “As First Reported” database collects data from firm’s *initial* SEC filing of the 10-Q. Thus, the data for the numerator are not backfilled with 10-Q data and data for the denominator are not from restated financial statements. This is important for two reasons. First, voluntary disclosure of financial information is the measure of interest and, therefore, I must obtain the number of line items disclosed in the earnings release (and thus, voluntary), not the 10-Q, which is filed after the earnings announcement. Second, restated financial statements potentially contain line items not in the original 10-Q. Therefore, using unrestated data ensures that I am capturing management’s disclosure choices at the *time of original disclosure*.

### ***3.2.3 Measuring Consistency across Time and Consensus***

To measure consistency across time for the pre-Reg FD period, I define an indicator variable, *Open4*, equal to 1 for firms that host open earnings calls in each of four quarters, and 0 otherwise. For the post-Reg FD period, I hold consistency across time constant by requiring that firms have the required data to compute *QA\_Min*, *Disc\_QA*, and press release measures for at least three quarters per year.<sup>13</sup> Consensus concerns other firms’ disclosure choices and is beyond management’s control. If a given firm hosts an earnings call, and most other firms host earnings calls, then the disclosure exhibits high consensus. Consensus is, therefore, a time period factor, not a firm-specific factor. Because of the increasing prevalence of conference calls – calls listed on Bestcalls.com increased from about 2,900 in the first quarter of 2000 to about 3,700 in the fourth quarter of 2004 -- I consider the pre-Reg FD period a low consensus period and the post-Reg FD period a high consensus period. Based on these definitions of

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<sup>13</sup> I do not require conference calls in each of four quarters for the Post-Reg FD sample because of potential incompleteness of Thomson’s StreetEvents database (discussed in Section 6). For example, firms could be missing from certain quarters in the database even though they hosted a call. Requiring four quarters unnecessarily reduces the sample size.

consistency and consensus, I expect stronger results for firms that consistently host conference calls in the pre-Reg FD period.

To summarize, I capture Kelley’s information categories as follows:

<b>Consensus</b>	<b>Distinctiveness</b>	<b>Consistency (across modalities)</b>	<b>Consistency (across time)</b>
Sample partition (pre- vs. post-Reg FD)	Conference call openness	Level of financial statement detail in earnings releases	Number of calls for pre-Reg FD sample; held constant for post-Reg FD sample

Low consensus, low distinctiveness (high openness), and high consistency lead to an unambiguous *internal* attribution, or commitment.

### 3.3 Measuring the Consequences of Commitment to Disclosure

As discussed in section 2, analytical research predicts that commitment to increased disclosure reduces the cost of capital by reducing information asymmetry among investors and increasing liquidity. I measure the capital market consequences of commitment to disclosure by assessing liquidity, information asymmetry, and cost of capital. I measure liquidity using the bid-ask spread. Using data obtained from the NYSE’s Trades and Quotes (TAQ) database, I measure liquidity as the daily relative bid-ask spread:

$$Spread = \sum_{q=1}^Q (ask_q - bid_q) / ((ask_q + bid_q) / 2) / Q \quad (1)$$

where  $q$  indexes intraday bid-ask quotes,  $Q$  is the total number of quotes for the day,  $ask$  is the ask price, and  $bid$  is the bid price. Thus,  $Spread$  is the average daily relative spread. This measure has been used in the disclosure literature to measure liquidity (see, for example, Leuz and Verrecchia [2000]) and can be calculated for broad samples and short measurement intervals.

My second measure of the capital market effects of disclosure is a measure of information asymmetry – the probability of informed trade (PIN). This measure captures the probability that a trade is executed with an informed trader, and has been used in disclosure studies (Brown, Hillegeist, and Lo

[2004]; Brown and Hillegeist [2007]). Quarterly PIN scores are obtained from Stephen Brown's website. I average quarterly PIN estimates to obtain an annual PIN for each sample firm.

My third measure of the capital market effects of disclosure is quarterly cost of capital estimates based on Value Line analyst forecasts developed by Brav, Lehavy, and Michaely [2005] and used by Francis, Nanda, and Olsson [2007], among others. These measures can be calculated only for the large, stable firms followed by Value Line. My measure of cost of capital (*CofC*) satisfies the following equality:

$$(1 + CofC)^4 = \frac{TP}{P} + \frac{DIV \left[ \frac{(1 + CofC)^4 - (1 + g)^4}{CofC - g} \right]}{P} \quad (2)$$

where *TP* = 4-year out target price; *DIV* = forecast of dividends; and *g* = dividend growth rates. All data are from Value Line. *P* = stock price nine days prior to the Value Line report date and is obtained from CRSP. I average quarterly cost of capital estimates to obtain an annual cost of capital for each sample firm.

### 3.4 Capturing Management Choice in Conference Calls

Prior to Reg FD, management could choose to host open calls, closed calls, or none at all. Although Reg FD eliminated the choice between open and closed calls, management still chooses the *degree* of openness. I capture this construct using the number of minutes devoted to the discussion portion of the call, discussed in section 3.2.1 (*QA\_Min*). In this section, I discuss the measurement of an alternative proxy for this construct, the *discretionary portion* of *QA\_Min*.

Matsumoto, Pronk, and Roelofsen [2006] document an inverse relation between the number of words in the question-and-answer portion of earnings announcement conference calls (hereafter, calls) and period-specific performance, as measured by returns. In addition, Frankel, Mayew, and Sun [2007] show that calls are longer when firms miss analyst earnings estimates by a large amount. These results suggest that the number of Q&A minutes in an earnings conference call, *QA\_Min*, is affected by *analyst demand* (the worse the firm's performance, the more explanation demanded). On the other hand, Mayew [2007]

presents evidence that managers *choose* which analysts may ask questions and when. His evidence shows that analysts with more favorable views of the firm are more likely to participate on the call than analysts with unfavorable views. These results suggest that  $QA\_Min$  is also affected by *management choice*. To separate the portion of  $QA\_Min$  that is more likely to be a management choice from the portion driven by analyst demand, I estimate the following model cross-sectionally, by calendar quarter, for the years 2003 and 2004 (control variables are determined based on results in Matsumoto, et al. [2006]):

$$QA\_Min_{i,q} = \alpha_0 + \alpha_1 Ret_{i,q} + \alpha_2 |Ret_{i,q}| + \alpha_3 BadNews_{i,q} + \alpha_4 |FE_{i,q}| + \alpha_5 Loss_{i,q} + \alpha_7 \ln AF_{i,q} + \alpha_8 \ln MVE_{i,q} + \alpha_9 FQ4_{i,q} + \varepsilon_{i,q} \quad (3)$$

where  $QA\_Min$  is the time spent on the discussion portion of the call. Following Matsumoto, et al. [2006] I percentile-rank all variables (except indicators) because of potential non-linear relations among the variables, and I use several variables to represent analyst demand for openness: the *sign* of period-specific news is represented by  $Ret$ , the cumulated daily market-adjusted returns for the 60 trading days up to 2 trading days prior to the current earnings announcement;  $BadNews$ , an indicator variable equal to 1 if firm  $i$  missed the consensus IBES forecast (measured for the last month of the quarter) for quarter  $t$  and 0 otherwise; and  $Loss$ , an indicator variable equal to 1 if the firm reports a loss in the current quarter and 0 otherwise. The *magnitude* of period-specific news is represented by  $|Ret|$ , the absolute value of  $Ret$ ; and  $|FE|$ , the absolute value of the current quarter's forecast error, where forecast error is defined as actual earnings per share minus consensus IBES forecast of earning per share for the last month of the quarter. General analyst demand is represented by  $\ln AF$ , log of number of analysts on IBES issuing earnings forecasts for the quarter being discussed;  $\ln MVE$ , log of market value of equity for the quarter; and  $FQ4$ , an indicator variable equal to 1 if the quarter is firm  $i$ 's 4<sup>th</sup> fiscal quarter and 0 otherwise. Positive coefficients are expected on each variable except  $Ret$ , for which I expect a negative coefficient, because, holding all else constant, quarters with better performance should be associated with less Q&A during the conference call. For each year, I average each firm's quarter-specific error terms,  $\hat{\varepsilon}_{i,t}$ ,  $Disc\_QA$ .  $Disc\_QA$  represents management's average "discretionary" portion of  $QA\_Min$  for the year.

#### 4. Sample – Pre-Reg FD

For the period October 1, 1999 to September 30, 2000, I require financial statement data from quarterly earnings announcement press releases in each calendar quarter (four earnings announcements). I obtain these data from Compustat's Preliminary History and As First Reported databases. The sample period is limited by the availability of conference call data (which begin for open calls in mid-1999) and the effective date of Reg FD (October 2000). Requiring an earnings announcement in each quarter allows each firm the opportunity to host an earnings announcement conference call in each quarter. I obtain conference call data from Bestcalls.com and the First Call Historical database (described in Bushee, Matsumoto, and Miller [2003]). Each database lists the firm and date of call. Bestcalls.com began listing information on open conference calls in 1999 and First Call lists information on conference calls available for purchase for commercial or academic use, beginning around 1995. Following Bushee, et al. [2003] I identify all calls listed on the Bestcalls.com database as open calls and calls listed on First Call, but not Bestcalls.com, as closed calls. I focus on earnings calls and, following Bowen, Davis, and Matsumoto [2002], restrict the sample to call dates between 3 trading days before and 5 trading days after the Compustat earnings announcement date. Firms without conference calls during this 9-day window are classified as having no earnings calls for the quarter.<sup>14</sup> There are 20,148 firm-quarters with data available to compute the balance sheet, income statement and cash flow ratios described in section 3.2.2. Requiring firms to have data to calculate ratios in *each quarter* reduces the sample to 14,084 firm-quarter observations (3,521 unique firms).

Table 1 presents descriptive data on the sample of firms issuing four earnings announcements in the quarters from October 1, 1999 to September 30, 2000. Panel A presents descriptive statistics for call classifications and press release measures. *Num\_Calls* is the number of earnings calls hosted during the 12-month period; *Num\_Opens* is the number of open calls; and *Num\_Closed* is the number of closed calls. *BS\_Ratio* (*IS\_Ratio*) [*SCF\_Ratio*] is the proportion of balance sheet (income statement) [cash flow

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<sup>14</sup> Inferences are unchanged if I define earnings calls as those with dates between 2 days before and 2 days after the earnings announcement date.

statement] line items disclosed in the earnings release. Because I evaluate consistency over time, and data for conference calls before Reg FD are limited to a 12-month period, press release measures are averaged across four quarters to obtain one measure per firm. The mean (median) *BS\_Ratio* is 44% (46%), indicating that, on average, firms present less than half the possible balance sheet line items in earnings releases. There is also substantial cross-sectional variation for this measure (standard deviation = 0.36). The mean (median) *IS\_Ratio* is 82% (86%), indicating that, in contrast to balance sheet information, firms tend to provide more than 80% of possible income statement items in their earnings releases. In addition, the minimum *IS\_Ratio* is 38%, while the *first quartile* for *BS\_Ratio* is 0%. All firms include a substantial portion of the income statement while a large proportion of firms do not include *any* balance sheet information. The mean (median) *SCF\_Ratio* is 4% (0%), indicating that most firms do not provide *any* cash flow statement information in earnings releases. Because of the greater cross-sectional variation in balance sheet measures, I expect commitment measures based on the balance sheet will be more powerful than measures based on the income statement or statement of cash flows.

Panels B and C show the distribution of firms with 0, 1, 2, 3, or 4 calls and open calls, respectively, along with mean and median values of *BS\_Ratio*, *IS\_Ratio*, and *SCF\_Ratio* for each group of firms. These ratios are calculated as the average ratio across the four quarters in the sample period. 29% (1,007) of firms do not host *any* earnings calls during the 12-month pre-Reg FD sample period while 37% (1,296) of firms host an earnings call in each quarter. The mean and median values for all three earnings release measures are lower for firms hosting zero calls than for firms hosting *any* calls, significant at the <.001 level. I interpret this as preliminary evidence of a complementary relation between disclosure through conference calls and disclosure through earnings releases.

69% (2,419) of firms do not host *any* open earnings calls during the 12-month period and 7% (249) host an open call in each quarter. In addition, the mean and median values for all three press release measures are higher for firms that host one or more open calls versus firms that never host open calls (p-values for differences in means (medians) = .00 (.00), .00 (.06), and .04 (.07) for *BS\_Ratio*, *IS\_Ratio*, and *SCF\_Ratio*, respectively). Panel D presents univariate correlations. Consistent with a complementary

relation among earnings announcement disclosures, all financial statement measures are positively correlated with one another and with conference call measures. In particular, the Pearson correlation between *Num\_Calls* (*Num\_Opens*) and *BS\_Ratio* is 0.188 (0.169).

## 5. Research Design and Empirical Tests – Pre-Reg FD

In this section, I discuss my research design and empirical tests for the Pre-Reg FD sample. I discuss and present results for cross-sectional (section 5.1) and time-series tests (section 5.2) of the relation between my measure of disclosure commitment and three capital market outcome measures: liquidity, information asymmetry, and cost of capital.

### 5.1 Cross-Sectional Tests

#### ***Liquidity (Bid-Ask Spread)***

Prior research has determined three components of (or costs associated with) the bid-ask spread – order processing costs, inventory holding costs, and adverse selection costs (see, e.g., Stoll [1978]). Order-processing costs are direct costs associated with providing market making services. Inventory holding costs are costs associated with supplying investors with immediate exchange. Adverse selection costs involve the possibility that market makers are trading with better informed investors. I measure order processing costs as *lnVolume*, the natural log of average daily share turnover for calendar year 2000, where share turnover is calculated as the volume of shares traded divided by the number of shares outstanding. I measure inventory holding costs as *lnPrice*, the natural log of the average daily price for calendar year 2000, and *lnVolatility*, the natural log of the standard deviation of daily returns for calendar year 2000. I measure adverse selection costs using firm size, *lnSize*, the natural log of the average daily market capitalization for calendar year 2000. Because of systematic differences in bid-ask spreads between the exchanges, I include only firms traded on the New York Stock Exchange (NYSE) (see, for example, Affleck-Graves, Hedge, and Miller [1994]). I test for an association between commitment to increased disclosure and liquidity by estimating the following cross-sectional regression. All control variables are from the CRSP daily files:

$$Spread_i = \alpha_0 + \alpha_1 Commit_i + \alpha_2 \ln Size_i + \alpha_3 \ln Price_i + \alpha_4 \ln Volume_i + \alpha_5 \ln Volatility_i + \varepsilon_i \quad (4)$$

I measure *Commit* over the 12 months between October 1, 1999 and September 30, 2000, in four ways, based on the balance sheet ratio, income statement ratio, cash flow statement ratio, and total ratio.

*Commit* = 1 if *Open4* = 1 and either the *BS\_Ratio*, *IS\_Ratio*, or *Total\_Ratio*, is greater the sample median, and 0 otherwise, where *Open4* = 1 if the firm hosts four open earnings calls, and 0 otherwise. I measure commitment based on the statement of cash flows if *Open4* = 1 and the firm discloses *any* cash flow information.

Results are presented in Table 2. Due to data requirements for CRSP and TAQ, as well as the NYSE listing requirement, the sample size is reduced from 3,521 firms to 1,273 firms. Panel A shows that 4.2%, 3.4%, 1.5%, and 4.1% of firms commit to increased disclosure based on the *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, and *Total\_Ratio*, respectively. The mean (median) relative spread is 0.012 (0.007). Panel B reports regression results. The first four columns show results from estimating equation (4). All tests are one-tailed. I find that *Commit*, based on either *BS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio*, is negatively associated with *Spread* ( $t = -1.45, -3.08, \text{ and } -1.52$ , respectively), while results based on the income statement are insignificant ( $t = -0.42$ ). Coefficient values suggest that, on average, committed firms (based on *BS\_Ratio* and *Total\_Ratio*) have spreads about 8% lower than other firms, while committed firms (based on *SCF\_Ratio*) have spreads about 25% lower than other firms. (Results based on the statement of cash flows should be interpreted with caution because of the small number of firms disclosing cash flow statement information.)

Because the covariation principle implies that there are no main effects for any one component of commitment, I also report results in the last four columns which allow for *Open4* and press release ratios to enter the regression separately as main effects. The covariation principle predicts that the main effects would be insignificant, while the interaction effect would be significant and negative. The results show that the main effects for *BS\_Ratio* and *Total\_Ratio* are negative and significant ( $t = -2.09 \text{ and } -1.70$ ,

respectively), and the interaction effects for *IS\_Ratio*, *SCF\_Ratio*, and *Total\_Ratio* are negative and significant (t = -1.37, -2.22, and -1.74, respectively).

I draw two conclusions with respect to the effects of commitment on liquidity. First, inconsistent with my hypothesis, the disclosure of balance sheet information is significantly related to liquidity, without regard to whether firms consistently host open calls. Second, consistent with my hypothesis, the combination of consistent open calls and disclosure of cash flow information is positively related to liquidity, although such results should be interpreted with caution because of the small number of firms that disclose cash flow information.

### ***Information Asymmetry (PIN Score)***

I test for a relation between information asymmetry, measured by PIN score, and disclosure commitment by regressing *PIN* on *Commit* and several control variables that represent factors likely to influence information asymmetry (Brown, et al. [2004]). I include *lnMVE*, the natural log of market value of equity at the beginning of fiscal year 2000, to proxy for firm size (from CRSP). I control for the presence of sophisticated investors with *lnAnalysts*, the natural log of the number of IBES analysts issuing annual earnings estimates for fiscal year 2000, and *Inst\_Own*, the percentage of outstanding shares owned by institutions at the beginning of fiscal year 2000 (from Thomson Financial). I control for uncertainty about future earnings with *Dispersion*, the natural log of (1 + (1/standard deviation of annual fiscal year 2000 IBES analyst earnings forecasts)). If fewer than two analysts follow the firm, I set *Dispersion* equal to zero. I also include exchange indicator variables to capture average differences in PIN related to market microstructure. I test for the association between commitment to increased disclosure and information asymmetry by estimating the following cross-sectional regression:

$$PIN_i = \beta_0 + \beta_1 Commit_i + \beta_2 \ln MVE_i + \beta_3 \ln Analysts_i + \beta_4 Inst\_Own_i + \beta_5 Dispersion_i + \beta_6 NYSE_i + \beta_7 AMEX_i + \varepsilon_i \quad (5)$$

Results are presented in Table 3. Due to data requirements, the sample size is reduced from 3,521 firms to 3,082 firms, although sample characteristics do not appear to change noticeably. In particular, Panel A reports that 5.1%, 4.0%, 0.9%, and 5.2% of firms commit to increased disclosure based on the

*BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, and *Total\_Ratio*, respectively, similar in magnitude to the commitment measures computed for the spread sample. The mean (median) PIN is 19.9% (18.2%). Results from the regression analysis are reported in Panel B. All tests are one-tailed. *Commit* based on balance sheet information and total financial statement information is significantly negatively associated with PIN scores ( $t = -1.47$  and  $-1.39$ , respectively, significant at the .10 level). The coefficient values reveal that committed firms' PIN scores are approximately 1 percentage point lower than PIN scores for firms that are not committed. Evaluated against the mean PIN of 19.9%, this represents a decrease in PIN of about 5%. *Commit* measures calculated based on *IS\_Ratio* and *SCF\_Ratio* are not significantly related to PIN ( $t = -0.34$  and  $1.52$ , respectively).

Because the covariation principle implies that there are no main effects, I also report results in the last four columns which allow for *Open4* and press release ratios to enter the regression separately as main effects. The covariation principle predicts that the main effects would be insignificant, while the interaction effect would be significant and negative. The results show that the main effects for *BS\_Ratio*, *IS\_Ratio*, and *Total\_Ratio* are negative and significant ( $t = -5.10$ ,  $-1.85$ , and  $-3.48$ ), while the interaction effect for *IS\_Ratio* is negative and significant at the .10 level ( $t = -1.41$ ). Taken as a whole, inconsistent with my hypothesis, the disclosure of balance sheet information is significantly related to information asymmetry, without regard to whether firms consistently host open calls.

### ***Cost of Capital***

I test for the association between commitment to increased disclosure and cost of capital by estimating the following cross-sectional regression:

$$CofC_i = \gamma_0 + \gamma_1 Commit_i + \gamma_2 AQ_i + \gamma_3 Beta_i + \gamma_4 \ln MVE_i + \gamma_5 \ln BTM_i + \varepsilon_i \quad (6)$$

I include four risk factors indentified in prior literature as control variables. *AQ* represents accruals quality and is estimated using equation (7). I estimate equation (7) for each Fama and French [1997] industry with at least 20 firms for the five years preceding fiscal year 2000:

$$\frac{TCA_{j,t}}{Assets_{j,t}} = \theta_{0,j} + \theta_{1,j} \frac{CFO_{j,t-1}}{Assets_{j,t}} + \theta_{2,j} \frac{CFO_{j,t}}{Assets_{j,t}} + \theta_{3,j} \frac{CFO_{j,t+1}}{Assets_{j,t}} + \theta_{4,j} \frac{\Delta Rev_{j,t}}{Assets_{j,t}} + \theta_{5,j} \frac{PPE_{j,t}}{Assets_{j,t}} + v_{j,t} \quad (7)$$

where  $TCA_{j,t}$  = total current accruals in year  $t$ ;  $CFO_{j,t}$  = cash flow from operations in year  $t$ ;  $\Delta Rev_{j,t}$  = firm  $j$ 's change in revenues from year  $t - 1$  to year  $t$ ; and  $PPE_{j,t}$  = firm  $j$ 's gross property, plant and equipment in year  $t$ . Annual cross-sectional estimations yield firm- and year-specific residuals. I calculate accruals quality by computing the standard deviation of such residuals from time  $t - 4$  to  $t$ :  $AQ_{j,t} = \sigma(\hat{v}_{j,t})$ . *Beta* is the CAPM beta measured over the 60 months prior to fiscal year 2000; *lnBTM* is the natural log of the book-to-market ratio at the beginning of fiscal year 2000; and *lnMVE* is the log of market value of equity at the beginning of fiscal year 2000.

Results are presented in Table 4. Due to Value Line data requirements the sample is reduced from 3,521 firms to 687 firms. The restriction biases the sample to larger and more successful firms. For example, the mean (median) market value of equity for these 687 firms is approximately \$9.75 billion (\$1.48 billion), while the mean (median) market value of equity for the PIN sample is \$3.24 billion (\$0.29 billion). Panel A reports that 6.1%, 6.0%, 1.9%, and 6.4% of firms commit to increased disclosure based on the *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, and *Total\_Ratio*, respectively. The mean (median) cost of capital is 19.6% (19.0%).

Results from the regression analysis are reported in Panel B. All tests are one-tailed. *Commit* based on balance sheet information is significant, at the .10 level, and negatively associated with cost of capital ( $t = -1.40$ ). The coefficient value reveals that committed firms' costs of capital are approximately 1.6 percentage points lower than costs of capital for firms that are not committed. Evaluated against the mean cost of capital of 19.6%, this represents a decrease in cost of capital of about 8%. *Commit* calculated using *IS\_Ratio* is negative and insignificant ( $t = -0.12$ ), while *Commit* calculated using *SCF\_Ratio* is positive and significant ( $t = 2.31$ ).

Because the covariation principle implies that there are no main effects, I also report results in the last four columns which allow for *Open4* and press release ratios to enter the regression separately as

main effects. The covariation principle predicts that the main effects would be insignificant, while the interaction effects would be significant and negative. The results show that the main effects for *BS\_Ratio*, *SCF\_Ratio*, and *Total\_Ratio* are *positive* and significant at the .001 level ( $t = 2.41, 2.27, \text{ and } 2.81$ ), while the interaction effect for *BS\_Ratio* is negative and significant at the .10 level ( $t = -1.54$ ). While the positive association between certain financial statement ratios and cost of capital is surprising, it is consistent with results reported in Francis, et al. [2007] and Botoson and Plumlee [2002], who find positive relations between both management forecasts and quarterly AIMR scores, respectively, and cost of capital.

The negative and significant coefficient on the interaction term indicates that the relation between *BS\_Ratio* and cost of capital is less positive for firms that consistently host open calls when compared to all other firms. The sum of the coefficients on *Open4* and *Open4\*BS\_Ratio* ( $-0.047 + 0.022$ ) is insignificant (F-value = 0.82), although when I estimate the regression in decile ranks the sum of the coefficients is negative and significant (F-value = 2.97). This result provides some evidence that the relation between *BS\_Ratio* and cost of capital is negative and significant for firms that consistently host open calls, consistent with my hypothesis. Taken as a whole, I find that consistently hosting open calls and disclosing balance sheet information in earnings releases is negatively related to cost of capital.<sup>15</sup>

In summary, results for liquidity and information asymmetry suggest that disclosure of balance sheet information is significant and negatively related to spread and PIN scores, regardless of whether firms host open calls. Results for cost of capital suggest, consistent with my hypothesis, that the combination of disclosure of balance sheet information and hosting open calls is significant and negatively associated with implied cost of capital estimates.<sup>16</sup>

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<sup>15</sup> In additional tests, I estimate cost of capital regressions using decile ranks for all variables (to control for potential outliers) and using a one-factor model instead of a four-factor model. Results are similar to those reported for regressions with main and interaction effects, although the coefficient on *Commit* in decile-rank regressions is negative but insignificant ( $t = -1.10$ ).

<sup>16</sup> As a robustness test, I re-estimate all regressions using only firms that host four earnings calls during the 12-month period. This helps ensure that firms are not substantially different in ways I am unable to capture in my regressions. I measure commitment based on the balance sheet and find that the coefficient for *Commit* is

## 5.2 Time-Series Tests

In addition to the cross-sectional results reported in Tables 2 - 4, I also present results from time series analyses. Time series tests hold firm characteristics constant and, thus, are less susceptible to correlated omitted variable problems. As previously discussed, I identify calls listed on Bestcalls.com as “open calls” and calls listed on First Call, but not Bestcalls.com, as “closed calls”. During the period October 1999 to September 2000, 822 firms switched from hosting closed calls in one quarter to hosting open calls in the following quarter. In addition, 449 firms switched from hosting open earnings calls in one quarter to hosting closed earnings calls in the following quarter. Based on the covariation principle, firms that host open calls exhibit low distinctiveness and, when combined with other covariation information, are more committed to disclosure. Therefore, firms that switch to open calls should experience decreases in information asymmetry-based trading measures after the switch and firms that switch to closed calls should experience increases in information asymmetry-based trading measures after the switch. To test this prediction, I conduct an event study for each of the dependent variables used in the cross-sectional tests – spread, PIN, and cost of capital. Results are presented in Table 5 for 822 firms that switched from closed to open calls and Table 6 for 449 firms that switched from open to closed calls.

First, I discuss the spread results. To control for systematic time trends in the bid-ask spread, I also compute exchange-adjusted spreads, calculated as firm-specific relative spreads (for the switching firm) minus average spreads, by exchange (for all firms). Consistent with cross-sectional tests, I focus only on NYSE firms. To evaluate the pre- and post-switch periods, I exclude the 7 trading days surrounding the date of switch, and calculate the firm-specific and average spreads as the mean relative spreads over the 30 trading days prior to and after the week of the switch.<sup>17</sup>

A timeline of variable measurement is shown in Figure 1 and results are presented in Table 5. Panel A presents descriptive evidence on measures of the relative spread and exchange-adjusted spread before

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insignificant for both the Spread and PIN samples ( $t = -0.88$  and  $-0.54$ , respectively). The coefficient is negative and significant ( $t = -1.90$ ) for the cost of capital sample.

<sup>17</sup> Firms typically announce conference calls ahead of time. I use the actual date of the call as opposed to the announcement date because other covariation information (for example, the earnings release) is not available until the date of the call.

and after the switch. Mean relative spread increased and median relative spread did not change after the switch while the mean exchange-adjusted spread did not change and the median exchange-adjusted spread decreased after the switch. Panel B reports statistical evidence as well as further partitions of the sample. 312 of the full sample of 822 switching firms have the required data to conduct the changes analysis on spreads. All tests are one-tailed. The median decrease in *Spread* is significant for the full sample (p-value = .00), and for both samples of firms depending on whether the following earnings call is also open (p-value = .00). In addition, the median decrease in spread is 0.0003 when the sample is restricted to firms that host an open call in the following quarter as well as have *BS\_Ratios* above the median (p-value = .00).<sup>18</sup> This represents a median decrease in relative spreads of about 4%. Overall, these results are consistent with the prediction that firms switching to open calls (low distinctiveness) and having balance sheet ratios above the median (high consistency across modalities) experience increases in liquidity.

I next discuss PIN results. 682 firms have required PIN data and press release data. PIN data are available by calendar quarter. I consider the PIN measure in the calendar quarter before the switch and in the calendar quarter after the switch, excluding the calendar quarter *of the switch*. Exchange averages are calculated for all available firms, excluding the firm of interest, over the same calendar quarter, by exchange. Exchange-adjusted PIN scores are calculated as firm-specific PIN scores less average exchange PIN scores. A timeline of variable measurement is presented in Figure 1.

Table 5, Panel A shows that both raw PINs and exchange-adjusted PINs decrease following the switch from closed to open calls. Statistical results in Panel B focus on exchange-adjusted PINs. The median decrease is significant for the full sample (p-value = .05) and insignificant for both partitions on whether the subsequent call is also open. In addition, the mean and median decreases of 0.014 and 0.011 are significant for firms whose subsequent call is open and whose *BS\_Ratios* are above the median, consistent with commitment (p-values = .05 and .01, respectively). This represents a decrease in PIN

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<sup>18</sup> In all time series tests, I report and discuss results based on the balance sheet ratio because it exhibits greater cross-sectional variation than either the income statement or cash flow statement ratios.

scores of about 8 to 9%. Overall, these results are consistent with the prediction that firms switching to open calls (low distinctiveness) and having balance sheet ratios above the median (high consistency across modalities) experience decreases in PIN scores.

Finally, I discuss cost of capital results. A sample of 259 switching firms has the required Value Line and press release data. Cost of capital data are available four times a year, although they follow neither a calendar quarter nor a fiscal quarter convention. I measure cost of capital before (after) the switch as the nearest cost of capital estimate, within six months, before (after) the switch month. I exclude any cost of capital estimate in the switch month itself. Market costs of capital are computed as the average cost of capital, excluding the firm of interest. Market-adjusted costs of capital are firm-specific costs of capital less market costs of capital, over the same relevant windows. A timeline of variable measurement is presented in Figure 1.

Table 5, Panel A shows that means and medians for raw costs of capital increase, while means and medians for market-adjusted cost of capital decrease, from before to after the switch from closed to open calls. In Panel B, I present statistical evidence based on further sample partitions. The mean and median change is negative and significant for the full sample (p-values = .05), and negative and significant when the subsequent call is open (p-value = .00). Contrary to expectations, and in contrast to spread and PIN results, the decrease is significant when *BS\_Ratios* are *below* the median and insignificant when they are *above* the median. Upon further inspection, I find that firms that *increase* their balance sheet ratios from before to after the switch experience significant cost of capital decreases. These results (not reported) support my prediction – firms that both change disclosure policy (by switching to open calls) and *increase* disclosure in press releases (by increasing *BS\_Ratio*) experience decreases in cost of capital, with mean (median) changes of 0.013 (0.011), both significant at the .05 level. The result reported in Table 5, which is based on *levels* of *BS\_Ratio*, is driven by firms that have higher than average *BS\_Ratios*, but *decrease* such disclosure in the period after the switch. Consistent with expectations, mean and median decreases are significant when *IS\_Ratios* are above the median. The decrease is insignificant when the following call is open and *BS\_Ratios* are above the median.

In summary, market-adjusted measures for all three measures decrease after the switch to open calls. In addition, with the exception of cost of capital, such decreases are significant when *BS\_Ratios* are above the median, but insignificant when they are not. These results, taken as a whole, are consistent with my prediction that firms switching to open calls (low distinctiveness) and having financial statement ratios above the median (high consistency across modalities) experience increases in liquidity, and decreases in information asymmetry and cost of capital.

For the 449 firms that switch to *closed* calls, I expect each of my measures to increase following this change in disclosure policy, and I expect the results to be more robust when firms are consistently closed and also have low press release ratios. Results are presented in Table 6. All tests are one-tailed. Median results are *negative* and significant for Spread and PIN, and positive and insignificant for cost of capital. Because of the surprising result for Spread and PIN, I investigate further and find that median results are *positive* and significant for Spread (p-value = .09), and positive and insignificant for PIN (p-value = .22), when *BS\_Ratios* are below the median and the subsequent call is closed. Results for *CofC* also provide support for results reported in Table 5; in particular, firms switching from open to closed earnings calls (thus, becoming more distinct) experience *increases* in cost of capital.

Taken as a whole, the combination of cross-sectional and time-series results are most consistent with a negative relation between commitment to increased disclosure and cost of capital. In particular, the results suggest that firms which consistently host open calls and disclose balance sheet information in earnings releases have lower costs of capital than other firms. In addition, firms that switch from closed to open calls, as well as increase balance sheet disclosure, experience decreases in cost of capital.

## 6. Sample – Post-Reg FD

In this section, I discuss the post-Reg FD sample (section 6.1) and conduct tests of construct validity for measuring degrees of openness (section 6.2).

## 6.1 Post-Reg FD Sample

For the period January 2003 to December 2004, I obtain measures computed from conference call transcripts from Thomson's Street Events database, described in Mayew [2007].<sup>19</sup> As previously discussed, I restrict my sample to earnings calls to capture consistency across modalities (which requires a corresponding earnings release). I also require data from Compustat's Preliminary History and As First Reported databases, as well as data required to compute discretionary openness, *Disc\_QA*. The resulting sample consists of 13,021 firm-quarter observations and 4,349 firm-years. In addition, I require data for each firm-year to compute *Disc\_QA*, *QA\_Min*, and press release measures for at least three quarters. This reduces the final sample to 3,090 firm-years. I perform analyses using averages on an annual basis for the calendar years 2003 and 2004 (as opposed to quarterly tests) to help ensure that my measures capture degrees of openness and level of detail in earnings releases *consistently over time*. For example, a firm that discloses a complete balance sheet for each of three quarters has an average *BS\_Ratio* = 1.00, while a firm that discloses two complete balance sheets followed by no balance sheet information has an average *BS\_Ratio* = 0.67. Quarterly regressions would treat the firms equally in the first two quarters, while it is clear that the first firm is following a consistent policy, but the second firm is not.

Table 7, Panel A reports descriptive statistics for the sample with required data on earnings releases and conference call measures for 2003 and 2004. *Disc\_QA* is the residual from quarterly regressions of the number of question-and-answer minutes on proxies for analyst demand as in equation (3). The measure is intended to capture management's discretionary portion of Q&A minutes. *QA\_Min* is the number of minutes spent on the discussion portion of the call, and *%QA* is the proportion of the entire call dedicated to Q&A. By construction, *Disc\_QA* has a mean value close to 0 (1.17) and median of 0.63. The mean (median) values of *QA\_Min* and *%QA* are 28.86 minutes (28.31 minutes) and 56% (56%), respectively. Most notable, perhaps, is the sharp increase in *BS\_Ratio* for the post-Reg FD period. The mean (median) *BS\_Ratio* is 68% (79%), compared to 43% (45%) in the pre-Reg FD period. In addition, the first-quartile *BS\_Ratio* is 46% and 0% for the post-Reg FD and pre-Reg FD samples, respectively.

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<sup>19</sup> I thank Bill Mayew for providing these measures.

The increase is consistent with results reported in D'Souza, et al. [2006] and potentially reflects a tendency of firms towards increased disclosure during periods of heightened regulatory scrutiny. It also reflects a different sample composition. Firms hosting three or more calls per year on the Thomson Street Events database tend to be larger and more likely to include detailed financial statement information in earnings releases.

## 6.2 Tests of Construct Validity

Before Reg FD, I measure openness with an indicator variable, *Open*, for whether the conference call is restricted to invited participants. After Reg FD, because all calls are open (for listening) to the public, I employ different measures of openness – *Disc\_QA*, *QA\_Min*, and *%QA*. I conduct two construct validity tests in order to determine if these measures of “openness” after Reg FD capture the same construct as my measure of “openness” before Reg FD – open earnings calls.

First, I determine if my Post-Reg FD measures of openness are positively correlated with measures representing the level of detail in earnings releases, consistent with results in the Pre-Reg FD period. Table 7, Panel B reports that *Disc\_QA* is positively correlated with *BS\_Ratio* (Pearson and Spearman correlations = .045 and .039, respectively), while neither *QA\_Min* nor *%QA* is correlated with *BS\_Ratio* (Pearson correlations = -0.005 and -0.031, respectively). Second, I determine whether firms that appear in both the Pre-Reg FD sample and the Post-Reg FD sample have higher degrees of openness after Reg FD. Results are presented in Table 7, Panel C. For this test, I average values of Post-Reg FD openness across both sample years. Means and medians of *QA\_Min* are significantly higher (at the .05 level) for firms that hosted one or more open calls in the Pre-Reg FD period as compared to firms that never hosted an open call in the Pre-Reg FD period. Neither *Disc\_QA* nor *%QA* is significantly different between the two groups of firms. I conclude that two measures of openness, *Disc\_QA* and *QA\_Min*, have some construct validity and I therefore use these two measures in my main analyses.

## 7. Research Design and Empirical Tests – Post-Reg FD

In this section, I discuss my research design and empirical tests for the Post-Reg FD sample. I discuss and present results for cross-sectional tests for liquidity, information asymmetry, and cost of capital. All regressions are estimated as a pooled cross-section (two cross-sections encompassing 2003 and 2004). Firms need not be present in both years although they must host at least three conference calls each year with the required data to compute *Disc\_QA*, *QA\_Min*, and press release measures. Because of potential clustering, standard errors are clustered by firm, and year indicator variables are also included in each regression. I estimate the following regression to test the liquidity effects of commitment (control variables are defined in section 5):

$$\begin{aligned} Spread_{i,t} = & \alpha_0 + \alpha_1 Commit_{i,t} + \alpha_2 \ln Size_{i,t} + \alpha_3 \ln Price_{i,t} + \\ & \alpha_4 \ln Volume_{i,t} + \alpha_5 \ln Volatility_{i,t} + Year2003_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (8)$$

All variables are calculated as averages for calendar years of 2003 and 2004. I measure *Commit* based on the balance sheet ratio, income statement ratio, cash flow statement ratio, or total ratio, and either *Disc\_QA* or *QA\_Min*. *Commit* =1 if *Disc\_QA* (or *QA\_Min*) is greater than the sample median and either the *BS\_Ratio*, *IS\_Ratio*, or *Total\_Ratio*, is greater the sample median, and 0 otherwise. I measure commitment based on the statement of cash flows if *Disc\_QA* (or *QA\_Min*) is greater than the sample median and the firm discloses *any* cash flow information.

Results are presented in Table 8. 1,284 firm-years have the required data to compute spreads and control variables. Panel A reports that 25.2% to 25.5% of firms commit to increased disclosure based on the *BS\_Ratio*, *IS\_Ratio*, and *Total\_Ratio*. 20.3% to 21.0% commit based on the *SCF\_Ratio*. The mean (median) relative spread is 0.002 (0.001). Results from the regression analysis are reported in Panel B (for *QA\_Min*) and Panel C (for *Disc\_QA*). All tests are one-tailed. I discuss measures based on *QA\_Min*; inferences are similar for measures based on *Disc\_QA*. With regard to the first four columns, no measure of commitment is significantly associated with liquidity in the post-Reg FD period. The last four columns of each panel allow for the main effects of *QA\_Dum* and press release ratios to enter the regression separately. I define *QA\_Dum* as an indicator variable equal to 1 if its value is greater than the sample

median, and 0 otherwise. Defining *QA\_Min* as an indicator variable avoids concerns with potentially high collinearity when interacting continuous variables. Inconsistent with my hypothesis, interaction effects are not significantly associated with bid-ask spreads after Reg FD, although disclosure of statement of cash flow information is negatively related to spreads ( $t = -2.04$ ), regardless of conference call behavior. There are two potential reasons for these inconsistent results. First, because Reg FD required all calls (if hosted) to be open, there is less value in committing to increased disclosure after the regulation. Second, because of the decimalization of the stock exchanges, bid-ask spreads are much smaller and exhibit less cross-sectional variation than they do in my pre-Reg FD sample.

I estimate the following regression to test the information asymmetry effects of commitment (control variables are defined in section 5):

$$PIN_{i,t} = \beta_0 + \beta_1 Commit_{i,t} + \beta_2 \ln MVE_{i,t} + \beta_3 \ln Analysts_{i,t} + \beta_4 Inst\_Own_{i,t} + \beta_5 Dispersion_{i,t} + \beta_6 NYSE_{i,t} + \beta_7 AMEX_{i,t} + Year2003_{i,t} + \varepsilon_{i,t} \quad (9)$$

*Commit*, *PIN*, *lnAnalysts*, and *Dispersion* are calculated for the years 2003 and 2004, and *lnMVE* and *Inst\_Own* are measured at the beginning of fiscal years 2003 and 2004. Results are presented in Table 9. 2,700 firm-years have the required data to compute PIN scores and control variables. Panel A reports that 25.0% to 26.5% of firms commit to increased disclosure based on the *BS\_Ratio*, *IS\_Ratio*, and *Total\_Ratio*. 18.8% to 20.0% commit based on the *SCF\_Ratio*. The mean (median) PIN score is 16.1% (15.3%).

Results from the regression analysis are reported in Panels B (for *QA\_Min*) and C (for *Disc\_QA*). All tests are one-tailed. Results reported in the first four columns of Panel B show that *Commit* measured based on the *BS\_Ratio* is negative and significant at the .10 level ( $t = -1.43$ ). The coefficient value reveals that committed firms' PIN scores are approximately .2 percentage points lower than PIN scores for firms that are not committed. Evaluated against the mean PIN of 16.1%, this represents a decrease in PIN of about 1%. Commitment evaluated based on the *IS\_Ratio*, *SCF\_Ratio* or *Total\_Ratio* is insignificantly associated with PIN. The last four columns, which allow *QA\_Dum* and press release ratios to enter the regression as main effects, show that interaction effects are insignificant, although disclosure

of balance sheet information is significantly related to PINs, regardless of conference call behavior. This result is consistent with results for the pre-Reg FD period.

I estimate the following regression to test the cost of capital effects of commitment (control variables are defined in section 5):

$$CofC_{i,t} = \gamma_0 + \gamma_1 Commit_{i,t} + \gamma_2 AQ_{i,t} + \gamma_3 Beta_{i,t} + \gamma_4 \ln MVE_{i,t} + \gamma_5 \ln BTM_{i,t} + Year2003_{i,t} + \varepsilon_{i,t} \quad (10)$$

*Commit* and *CofC* are calculated for the years 2003 and 2004, and *AQ*, *Beta*, *lnMVE*, and *lnBTM* are measured as of the beginning of fiscal years 2003 and 2004. Results are presented in Table 10. 1,192 firm-years have the required data to compute cost of capital and control variables. Panel A reports that 25.2% to 26.1% of firms commit to increased disclosure based on the *BS\_Ratio*, *IS\_Ratio*, and *Total\_Ratio*. 21.6% to 22.5% commit based on the *SCF\_Ratio*. The mean (median) cost of capital is 14.2% (13.3%).

Results from the regression analysis are reported in Panel B (for *QA\_Min*) and Panel C (for *Disc\_QA*). All tests are one-tailed. Results reported in the first four columns of Panel B show that *Commit* measured based on the *BS\_Ratio* is negative and significant at the .01 level ( $t = -2.34$ ). The coefficient values reveal that committed firms' costs of capital are approximately 1 percentage point lower than costs of capital for firms that are not committed. Evaluated against the mean cost of capital of 14.2%, this represents a decrease in cost of capital of about 7%. The last four columns allow *QA\_Dum* and press release ratios to enter the regression as main effects. Interaction effects are insignificant, while disclosure of balance sheet information is significantly related to cost of capital ( $t = -1.98$ ). This result is in contrast to pre-Reg FD results, which indicate that balance sheet disclosure is *positively* related to cost of capital for the full sample.

In summary, post-Reg FD results are both inconsistent with my hypothesis and, except for PIN results, inconsistent with pre-Reg FD results. In the post-Reg FD period, the disclosure of balance sheet information is negatively related to PIN scores and cost of capital, regardless of conference call behavior. In addition, in the post-Reg FD period, the interaction between openness and financial statement ratios is

not related to the cost of capital, while in the pre-Reg FD period, the interaction between open calls and the disclosure of balance sheet information is significantly related to cost of capital. Finally, the economic magnitude of effects is lower in the post-Reg FD vs. the pre-Reg FD period. There are two potential reasons for the lack of significant results after Reg FD. First, I allow neither consensus nor consistency across time to vary after Reg FD. Therefore, detection of results depends solely on cross-sectional variation in distinctiveness and consistency across modalities. Second, because Reg FD increased the richness of the information environment, there may be less value to disclosure commitment post-Reg FD.

### *8. Additional Analysis & Robustness Tests*

In this section I discuss results of tests allowing consensus to vary in the pre-Reg FD sample (section 8.1) and results of tests intended to address endogeneity concerns (section 8.2).

#### 8.1 Pre-Reg FD Consensus

In my main tests, I consider the pre-Reg FD sample period a low consensus period because fewer firms hosted conference calls in the pre-Reg FD period as compared to the post-Reg FD period. In additional tests, I allow for pre-Reg FD consensus to vary by separating firms with calls in all four quarters from firms with sporadic or no conference calls. The first three columns of Table 11 present results.  $Call4 = 1$  if the firm hosts an earnings call in each quarter *and* at least one call is closed, and 0 otherwise. Including this variable's main effect and interaction with  $BS\_Ratio$  allows interpretation of the coefficient on  $Open4$  and its interaction as the incremental effect of consistently hosting open calls as compared to sporadically or never hosting calls. This is in contrast to the interpretation of coefficients in my main analyses, in which the baseline comparison includes firms that, in addition to sporadically or never hosting calls, also host calls in every quarter. In effect, I am allowing consensus to vary and thus testing for the effects of low consensus. I confine my discussion to the coefficient on  $Open4*BS\_Ratio$ . Results for all three capital market outcomes are similar to those reported in main analyses – the interaction of  $Open4$  and  $BS\_Ratio$  is insignificant for spread and PIN ( $t = -0.91$  and  $-0.46$ , respectively),

and negative and significant for cost of capital ( $t = -1.44$ , significant at the .10 level). This result suggests that consensus is an important factor in assessing cost of capital effects.

In addition to allowing consensus to vary, I also allow *comparison object* consensus to vary. Comparison object consensus extends the idea of consensus to *all* objects, not only the object associated with a particular effect. Applied to the example presented in Section 3.2, low comparison object consensus would be reflected by the observation that hardly anyone shares personal information with *Person C*. Applied to the disclosure setting, low comparison object consensus would be reflected by the observation that hardly any other firm hosts *open* earnings calls. To allow for the effects of comparison object consensus, I include an additional variable, *SporadicOpen*, which equals 1 if the firm hosts an open earnings call in 1, 2, or 3 quarters, and 0 otherwise. By including this variable and its interactions, I am able to interpret the coefficient on *Open4* and its interactions as the incremental effect of consistently hosting open calls as compared to hosting *no* open calls. This is in contrast to the interpretation of coefficients in my main analyses, in which the baseline comparison includes firms that, in addition to hosting zero open calls, also host sporadic open calls. I restrict the sample in this analysis to firms that host calls in all four quarters. The coefficient on *Open4\*BS\_Ratio* reveals that, for the PIN sample, there is a significant interaction between *Open4* and *BS\_Ratio* ( $t = -2.23$ ). I interpret this as evidence that, in testing the PIN relationship, comparison object consensus is more important than consistency across time. The coefficients for the spread and cost of capital samples are insignificant ( $t = -1.02$  and  $-1.07$ , respectively). Taken as a whole, the evidence suggests that consensus and comparison object consensus are important inputs into my commitment measure.

## 8.2 Endogeneity/Self-Selection

Because firms *choose* whether to commit, differences in liquidity, information asymmetry, or cost of capital could be attributable to unobservable firm characteristics rather than the commitment decision itself. In other words, firms *choose* to commit in consideration of the cost and benefits of such a decision. In this section, I discuss tests to help control for self-selection. I first estimate the following decision model that explains the decision to commit, including proxies for the costs and benefits of commitment:

$$\Pr ob(Commit_i = 1) = \Phi(\gamma_0 + \gamma_1 InstOwn_i + \gamma_2 AnalystFoll_i + \gamma_3 \ln MVE_i + \gamma_4 ROA_i + \gamma_5 HiTech_i + \gamma_6 \ln BTM_i + \gamma_7 Issue_i + \varepsilon_i) \quad (11)$$

For the pre-Reg FD sample, *Commit*=1 if *Open4*=1 and *BS\_Ratio* is in the upper half of the distribution and 0 otherwise. For the post-Reg FD sample, *Commit*=1 if *Disc\_QA* and *BS\_Ratio* are both in the upper half of the distribution, and 0 otherwise.<sup>20</sup> I include several independent variables shown by prior research (e.g., Lang and Lundholm [1993]) to proxy for the costs and benefits of commitment (all variables, except *InstOwn* and *AnalystFoll*, are obtained from Compustat): *InstOwn* = percentage institutional ownership at the beginning of the year (obtained from Thomson Financial); *AnalystFoll* = number of analysts issuing annual earnings forecasts for the prior fiscal year (obtained from IBES); *lnMVE* = log of market value of equity at the beginning of the year; *ROA* = net income before extraordinary items divided by total assets for the prior year; *HiTech* = 1 if the firm is in the high technology industry (SIC codes 2833-36, 3612-3, 3621-29, 3651-2, 3661-9, 3671-2, 3674, 3695, 4812-22, 4832-99, 7370-79) and 0 otherwise; *lnBTM* = natural log of the book-to-market ratio at the beginning of the year, and *Issue* = 1 if the firm's split-adjusted outstanding shares increased by more than 20% during the prior year, and 0 otherwise. I expect all variables to be positively related to *Commit*.

For the pre-Reg FD sample, the model is estimated for one cross-section covering disclosures from October 1, 1999 to September 30, 2000. For the post-Reg FD sample, the model is estimated as a pool covering two cross-sections of firms (2003 and 2004). The inverse Mills ratio is obtained from Equation (11) and included as an additional control variable in the treatment equation:

$$Y_i = \alpha_i + \alpha_2 Commit_i + \alpha_3 Controls_i + \alpha_4 InvMills_i + \varepsilon_i \quad (12)$$

where *Y* = one of three outcome measures (spread, PIN, or cost of capital); *Commit* is defined above based on open calls and balance sheet measures; *Controls* are control variables known to be associated with the outcome variable and defined previously; and *InvMills* = the ratio of the standard normal p.d.f.'s

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<sup>20</sup> I consider commitment based only on the balance sheet ratio because previous results suggest that disclosure of balance sheet information, as opposed to disclosure of income statement or cash flow statement information, is a more powerful indicator of commitment.

and c.d.f.'s obtained from the equation (11). A positive coefficient for *InvMills* indicates that self-selection is an issue for the sample. I discuss but do not report results. For the pre-Reg FD sample, pseudo- $R^2$ s range in magnitude from 4% to 7%. The coefficient for *HiTech* is significant and positive for the PIN and Cost of Capital samples ( $z = 2.71$  and  $2.12$ , respectively), while the coefficient for *Inst\_Own* is significant and positive for the Spread sample ( $z = 2.23$ ). The coefficient on *Commit* is negative for all three samples, and significant only for the Spread sample ( $t = -1.36$ , significant at the .10 level). I interpret this as evidence that cost of capital and PIN results are not robust to controlling for endogeneity, subject to the appropriateness of the Heckman procedure in controlling for self-selection.

As an alternative control for self-selection in the pre-Reg FD sample, I estimate the outcome equations for the high technology industries only. For the pre-Reg FD sample, the coefficient on *HiTech* is positive and significant for the PIN and cost of capital samples – and explains more of the decision to commit than other variables. Therefore, similar to Botosan [1997], I assume that membership in high technology industries is a key determinant of an optimal disclosure policy. I thus estimate each regression from Tables 2, 3, and 4, for high technology industries only, and consider any within-industry variation in disclosure as exogenous (Core [2001]). The coefficient on *Commit* is negative and significant for the cost of capital sample ( $t = -1.53$ ) and negative and insignificant for the PIN sample ( $t = -0.66$ ). I interpret this as evidence that the cost of capital results are robust to controlling for endogeneity, subject to the validity of my assumption that industry membership is a key determinant of disclosure policy.

For the post-Reg FD sample, my determinants variables explain less of the decision to commit (pseudo- $R^2$  of 2% vs. 7%). In addition, the coefficient on *HiTech* is not significantly positive for any of the three samples. In terms of the effects of commitment on capital market outcomes, the coefficient on *Commit* remains insignificant for the Spread sample ( $t = -0.61$ ) and remains negative and significant for the PIN and Cost of Capital samples ( $t = -1.49$  and  $-2.28$ , significant at the .10 and .001 levels, respectively). I interpret this as evidence that the post-Reg FD results are robust to controlling for endogeneity, subject to the quality of the determinants model in explaining commitment and the appropriateness of the Heckman procedure in controlling for self-selection.

## 9. Conclusion

I provide evidence on the relation between a corporate commitment to increased disclosure and measures of liquidity, information asymmetry, and cost of equity capital. I measure commitment based on theory in social psychology, using characteristics of earnings announcement press releases and conference calls. Prior to Reg FD I find that commitment to increased disclosure is negatively related to bid-ask spreads, PIN scores, and implied cost of capital estimates; however further analysis reveals that the disclosure of balance sheet information is related to spreads and PINs regardless of conference call behavior, inconsistent with my hypothesis. The combination of consistent open calls and balance sheet disclosure is required for an association between commitment and cost of capital. After Reg FD I find that commitment is negatively related to implied cost of capital estimates and PIN scores, but not related to bid-ask spreads; however further analysis reveals that the disclosure of balance sheet information is related cost of capital and PINs regardless of conference call behavior, inconsistent with my hypothesis.

I contribute to the literature in the following ways. First, I use theory from social psychology to provide a composite, *ex ante* measure of commitment to increased disclosure, relative to measuring only one of its aspects. In particular, I provide evidence using two distinct measures of disclosure, conference call openness and the disclosure of financial statement information in earnings releases, showing the relation between the two, and their relative impact on measures of liquidity, information asymmetry, and cost of capital. Second, I predict and find that the effect of commitment on capital market outcomes is weaker, in terms of statistical and economic magnitude, after Reg FD vs. before Reg FD. Third, I am able to identify *changes* in disclosure policies and examine associated *changes* in measures of liquidity, information asymmetry, and cost of capital, and thus, supplement and validate cross-sectional results.

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**Appendix A**  
**Summary of Measures of Disclosure and Consequences**

<i>Paper</i>	Measure of:			
	<i>Disclosure</i>	<i>Commitment?</i>	<i>Consequences</i>	<i>Additional Aspects</i>
Leuz and Verrecchia 2000	Adoption of IAS / US GAAP	Yes	Bid Ask Spread Volume Volatility	Simultaneous Equations: (Stage 1 Probit)
Healy et al. 1999	AIMR Ratings (sustained increase)	No	Stock Returns  Liquidity Institutional Ownership Analyst Following	Time Series Design
Brown et al. 2004	Conference Calls	Yes	PIN	Cross-Sectional & Time Series Designs
Brown and Hillegeist 2007	AIMR Ratings	No	PIN	Three-Stage Least Squares
Botosan 1997	Annual Report (self-constructed)	No	Cost of Capital	Manufacturing Industry Only
Francis et al. 2007	Annual Report (self-constructed)  Management Forecast Score Press Releases (frequency) Conference Calls (frequency)	No	Cost of Capital	Incorporates Information Quality
Botosan and Plumlee 2002	AIMR Ratings	No	Cost of Capital	
Coller and Yohn 1997	Management Forecasts	No	Bid Ask Spread	Time Series Design
Gelb and Zarowin 2002	AIMR Ratings	No	Stock Price Informativeness	
Welker 1995	AIMR Ratings	No	Bid Ask Spread	Simultaneous Equations
Sengupta 1998	AIMR Ratings	No	Cost of Debt	
Schrand and Verrecchia 2005	Press Releases (nature and frequency)	No	Extent of Underpricing	IPO Setting
Guo et al. 2004	Prospectuses (product-level score)	No	Bid Ask Spread  Depth Volatility	IPO Setting
Verrecchia and Weber 2006	Redacted disclosure	No	Bid Ask Spread Quoted Depth Volume	
Leone et al. 2007	IPO - Intended Use of Proceeds	No	Extent of Underpricing	IPO Setting

## Appendix B

### Selection of Financial Statement Line Items for Computation of *BS\_Ratio*, *IS\_Ratio*, and *SCF\_Ratio*

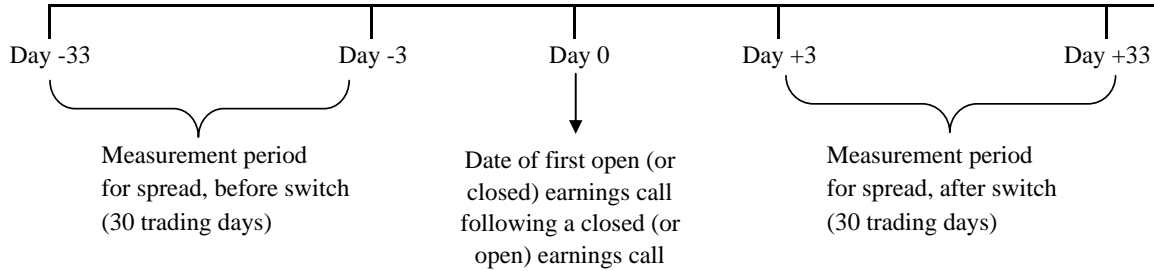
In my selection of financial statement line items to be included in the computation of *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, and *Total\_Ratio* I follow D'Souza, Ramesh, and Shen [2006] and include the following items. I also restrict the sample in three ways: first, there must be at least five financial statement line items in the 10-Q as per the As First Reported database, the source data from the As First Reported database must be the firm's 10-Q, and the 10-Q filing date must follow the firm's earnings announcement date.

	<u>Compustat Preliminary History / AFR Data Item #</u>	<u>Variable Name</u>
<b><u>Balance Sheet Items</u></b>	Q36	Cash and Short-Term Investments
	Q37	Receivables – Total (MMS)
	Q38	Inventories – Total
	Q39	Current Assets – Other
	Q40	Current Assets – Total
	Q41	Depreciation, Depletion, & Amortization (Accum) (BS)
	Q42	Property, Plant, & Equipment – Total (Net)
	Q43	Assets – Other
	Q44	Assets – Total
	Q45	Debt in Current Liabilities
	Q46	Accounts Payable
	Q47	Income Taxes Payable
	Q48	Current Liabilities – Other
	Q49	Current Liabilities – Total
	Q50	Liabilities – Other
	Q51	Long Term Debt – Total
	Q52	Deferred Taxes & Inv Tax Credit (BS)
	Q53	Minority Interest (BS)
	Q54	Liabilities – Total
	Q55	Preferred Stock – Carrying Value
	Q56	Common Stock
	Q57	Capital Surplus
	Q58	Retained Earnings
Q59	Common Equity – Total	
Q60	Stockholders' Equity – Total	
Q71	Preferred Stock – Redeemable	
Q98	Treasury Stock – Total Dollar Amount	
Q118	Property, Plant, & Equipment – Total (Gross)	
<b><u>Income Statement Items</u></b>	Q1	Selling, General, and Administrative Expenses
	Q2	Sales (Net)
	Q3	Minority Interest (Income Account)
	Q4	R&D Expense
	Q5	Depreciation and Amortization
	Q6	Income Taxes – Total
	Q8	Income Before Extraordinary Items
	Q10	Income before EI – Adjusted for CSE
	Q21	Operating Income before Depreciation
	Q22	Interest Expense

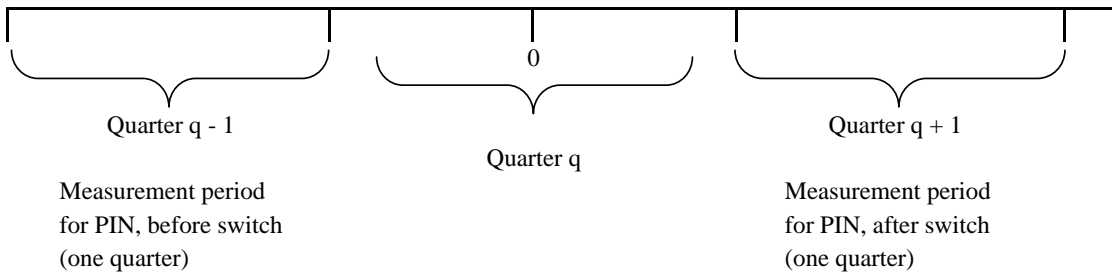
	Q23	Pretax Income
	Q24	Dividends – Preferred
	Q25	Income before EI – Available for Common
	Q26	EI and Discontinued Operations
	Q30	Cost of Goods Sold
	Q31	Non-operating Income (Expense)
	Q32	Special Items
	Q33	Discontinued Operations
	Q35	Deferred Taxes (Income Account)
	Q69	Net Income (Loss)
	Q117	Accounting Changes – Cum. Effect
	Q119	Extraordinary Items
	Q120	Common Stock Equiv. – Dollar Savings
<b>Cash Flow</b>		
<b>Statement Items</b>		
	Q74	Cash and Cash Equiv – Inc(Dec) (SCF)
	Q75	Changes in Current Debt (SCF)
	Q76	Income before EI (SCF)
	Q77	Depreciation and Amortization (SCF)
	Q78	EI and Discontinued Operations (SCF)
	Q79	Deferred Taxes (SCF)
	Q80	Equity in Net Loss (Earnings) (SCF)
	Q81	Funds from Operations – Other (SCF)
	Q83	Sale of Property, Plant, and Equipment (SCF)
	Q84	Sale of Common & Preferred Stock (SCF)
	Q85	Sale of Investments (SCF)
	Q86	Long-Term Debt – Issuance (SCF)
	Q89	Cash Dividends (SCF)
	Q90	Capital Expenditures (SCF)
	Q91	Increase in Investments (SCF)
	Q92	Long-Term Debt – Reduction (SCF)
	Q93	Purchase of Common & Preferred Stock (SCF)
	Q94	Acquisitions (SCF)
	Q102	Sale of PPE & Sale of Investments (SCF)
	Q103	Accounts Receivable – Dec (Inc) (SCF)
	Q104	Inventory – Dec(Inc) (SCF)
	Q105	Accounts Payable & Accrued Liabilities – Inc(Dec) (SCF)
	Q106	Income Tax – Accrued – Inc(Dec) (SCF)
	Q107	Assets and Liabilities – Other (NC) (SCF)
	Q108	Operating Activities – Net CF (SCF)
	Q109	Short-Term Investments – Change (SCF)
	Q110	Investing Activities – Other (SCF)
	Q111	Investing Activities – Net CF (SCF)
	Q112	Financing Activities – Other (SCF)
	Q113	Financing Activities – Net CF (SCF)
	Q114	Exchange Rate Effect (SCF)
	Q115	Interest Paid – Net (SCF)
	Q116	Income Taxes Paid (SCF)

**Figure 1**  
**Timeline of Variable Measurement for Time Series Tests (Pre-Reg FD)**

Panel A: Bid-Ask Spread



Panel B: PIN Scores



Panel C: Cost of Capital

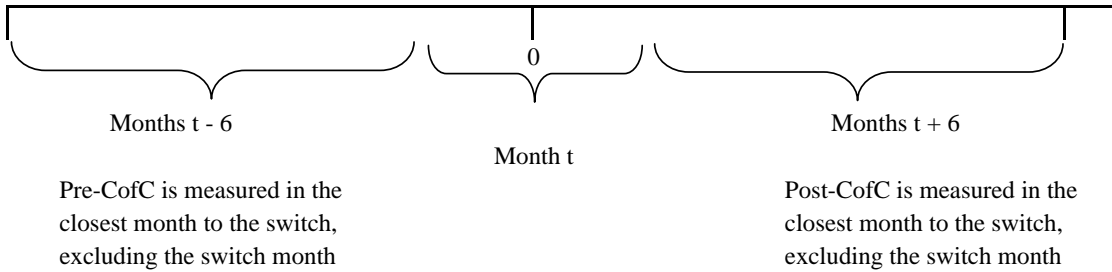


Figure 1 shows the timeline of variable measurement for Pre-Reg FD time-series tests discussed in Section 5.2. Information asymmetry based trading measures are calculated before and after a switch from closed to open earnings calls (results in Table 5), and from open to closed earnings calls (results in Table 6). Market-adjusted measures are also calculated by subtracting the market-wide average from the firm-specific measure.

Panel A shows timeline of variable measurement for time-series tests of liquidity, as measured by the bid-ask spread. Panel B show timeline of variable measurement for time-series tests of information asymmetry, as measured by PIN scores. Panel C show timeline of variable measurement for time-series tests of implied cost of capital estimates.

**TABLE 1**  
**Descriptive Data for Earnings Announcement Conference Calls and Level of Financial Statement Detail in Earnings Releases (Pre-Reg FD)**

Panel A: Distributional Statistics<sup>a</sup>

	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Min</u>	<u>Q1</u>	<u>Median</u>	<u>Q3</u>	<u>Max</u>
<i>Num_Calls</i>	3,521	2.26	1.67	0	0	3	4	4
<i>Num_Opens</i>	3,521	0.76	1.29	0	0	0	1	4
<i>Num_Closed</i>	3,521	1.50	1.52	0	0	1	3	4
<i>BS_Ratio</i>	3,521	0.44	0.36	0.00	0.00	0.46	0.78	1.00
<i>IS_Ratio</i>	3,521	0.82	0.12	0.38	0.77	0.86	0.90	1.00
<i>SCF_Ratio</i>	3,521	0.04	0.14	0.00	0.00	0.00	0.00	1.00

Panel B: Relation between Financial Statements in Earnings Releases and Earnings Conference Calls

		<u>Number of Earnings Calls</u>				
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
N=	3,521	1,007	276	328	614	1,296
<i>BS_Ratio</i>	Mean	0.326	0.460	0.471	0.466	0.499
	Median	0.213	0.495	0.504	0.495	0.563
<i>IS_Ratio</i>	Mean	0.787	0.821	0.835	0.827	0.839
	Median	0.841	0.852	0.859	0.861	0.859
<i>SCF_Ratio</i>	Mean	0.020	0.039	0.029	0.037	0.050
	Median	0.000	0.000	0.000	0.000	0.000

Panel C: Relation between Financial Statements in Earnings Releases and Open Earnings Conference Calls

		<u>Number of Open Earnings Calls</u>				
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
N=	3,521	2,419	305	268	280	249
<i>BS_Ratio</i>	Mean	0.400	0.470	0.525	0.522	0.587
	Median	0.361	0.500	0.621	0.571	0.696
<i>IS_Ratio</i>	Mean	0.816	0.823	0.837	0.829	0.836
	Median	0.857	0.857	0.859	0.857	0.857
<i>SCF_Ratio</i>	Mean	0.033	0.047	0.036	0.035	0.055
	Median	0.000	0.000	0.000	0.000	0.000

**TABLE 1 (continued)**

Panel D: Pairwise Correlations between Earnings Announcement Disclosures  
(Pearson Below Diagonal, Spearman Above Diagonal)

	<i>Num Calls</i>	<i>Num Opens</i>	<i>Num Closed</i>	<i>BS Ratio</i>	<i>IS Ratio</i>	<i>SCF Ratio</i>
<i>Num Calls</i>	1.000	0.518 <.0001	0.666 <.0001	0.183 <.0001	0.130 <.0001	0.098 <.0001
<i>Num Opens</i>	0.498 <.0001	1.000	-0.206 <.0001	0.169 <.0001	0.032 0.058	0.033 0.050
<i>Num Closed</i>	0.679 <.0001	-0.299 <.0001	1.000	0.074 <.0001	0.125 <.0001	0.073 <.0001
<i>BS_Ratio</i>	0.188 <.0001	0.169 <.0001	0.063 0.000	1.000	0.303 <.0001	0.211 <.0001
<i>IS_Ratio</i>	0.169 <.0001	0.059 0.000	0.136 <.0001	0.365 <.0001	1.000	0.149 <.0001
<i>SCF_Ratio</i>	0.085 <.0001	0.035 0.039	0.064 0.000	0.234 <.0001	0.141 <.0001	1.000

Sample description and variable definitions: The sample consists of 3,521 firms with earnings announcement data in each quarter from October 1, 1999 to September 30, 2000. Data on the disclosure of financial statement information in earnings releases are obtained from Compustat's Preliminary History and As First Reported databases. Conference call data are obtained from First Call and Bestcalls.com. Calls listed on Bestcalls.com are considered open calls while calls listed on First Call, but not Bestcalls.com are considered closed calls. *Num Calls* = the number of earnings calls hosted; *Num Opens* = the number of open earnings calls hosted; *Num Closed* = the number of closed earnings calls hosted; *BS\_Ratio* = the ratio of disclosed balance sheet items in the earnings release divided by the number of balance sheet items in the initial 10-Q; *IS\_Ratio* = the ratio of disclosed income statement items in the earnings release divided by the number of income statement items in the initial 10-Q; *SCF\_Ratio* = the ratio of disclosed cash flow statement items in the earnings release divided by the number of cash flow statement items in the initial 10-Q. Press release measures are averaged across four quarters.

a - Panel A reports descriptive statistics for conference call measures and press release measures. Panels B and C report the distribution of press release ratios for different levels of earnings calls and open earnings calls, respectively. Panel D reports pairwise correlations between earnings call measures and press release measures. p-values are below correlations.

**TABLE 2**  
**Cross Sectional Analysis: Commitment and Bid-Ask Spread (Pre-Reg FD)**

Panel A: Descriptive Statistics, N=1,273 <sup>a</sup>

	Commit = 1						
	Number	Percent	Mean	Std. Dev.	Q1	Median	Q3
<i>Commit (BS)</i>	53	4.2%					
<i>Commit (IS)</i>	43	3.4%					
<i>Commit (SCF)</i>	19	1.5%					
<i>Commit (Total)</i>	52	4.1%					
<i>Spread</i>			0.012	0.014	0.005	0.007	0.014
<i>lnSize</i>			20.639	1.811	19.374	20.550	21.750
<i>lnPrice</i>			2.958	0.860	2.417	3.072	3.579
<i>lnVolume</i>			-5.659	0.765	-6.129	-5.599	-5.169
<i>lnVolatility</i>			-3.469	0.426	-3.705	-3.472	-3.214

Panel B: Regression Analysis, Dependent Variable is *Spread*

	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.083	0.083	0.083	0.083	0.085	0.085	0.083	0.085
	19.43	19.42	19.38	19.42	19.86	18.32	19.32	19.47
<i>Commit</i>	-0.001	-0.0003	-0.003	-0.001	--	--	--	--
	-1.45	-0.42	-3.08	-1.52	--	--	--	--
<i>Open4</i>	--	--	--	--	0.001	0.005	0.001	0.002
	--	--	--	--	0.85	1.35	0.81	1.61
<i>FS_Ratio</i>	--	--	--	--	-0.001	-0.002	-0.0001	-0.002
	--	--	--	--	-2.09	-0.96	-0.09	-1.70
<i>Open4*FS_Ratio</i>	--	--	--	--	-0.002	-0.006	-0.006	-0.005
	--	--	--	--	-0.98	-1.37	-2.22	-1.74
<i>lnSize</i>	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	-7.27	-7.31	-7.24	-7.27	-7.37	-7.28	-7.25	-7.28
<i>lnPrice</i>	-0.008	-0.008	-0.008	-0.008	-0.008	-0.008	-0.008	-0.008
	-12.88	-12.88	-12.91	-12.89	-12.92	-12.93	-12.93	-12.95
<i>lnVolume</i>	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
	-9.33	-9.33	-9.36	-9.32	-9.24	-9.25	-9.34	-9.25
<i>lnVolatility</i>	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
	11.96	11.95	11.98	11.96	12.00	11.87	12.00	12.04
R <sup>2</sup>	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71

Sample description and variable definitions: The sample consists of 1,273 NYSE firms with earnings announcement data in each quarter from October 1, 1999 to September 30, 2000. Data are also required to compute spreads and control variables. *Commit* = 1 if *Open4* = 1 and either the *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio* is greater than the sample median, and 0 otherwise, where *Open4* = 1 if the firm hosts open calls in each of four quarters. *FS\_Ratio* is either the *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio*, depending on the column heading. *Spread* = the mean daily relative bid-ask spread averaged on calendar year 2000; *lnSize* = the average market value of equity for 2000; *lnPrice* = the log of the average price for 2000; *lnVolume* = the log of the average daily share turnover for 2000; *lnVolatility* = the log of return volatility for 2000. See Table 1 for other variable definitions.

a - Panel A reports descriptive statistics for the sample. Panel B reports the coefficient estimates and robust t-statistics obtained from OLS regressions of *Spread* on commitment and control variables.

**TABLE 3**  
**Cross Sectional Analysis: Commitment and PIN (Pre-Reg FD)**

**Panel A: Descriptive Statistics, N=3,082<sup>a</sup>**

Commit = 1		
	<u>Number</u>	<u>Percent</u>
<i>Commit (BS)</i>	157	5.1%
<i>Commit (IS)</i>	124	4.0%
<i>Commit (SCF)</i>	29	0.9%
<i>Commit (Total)</i>	159	5.2%

	<u>Mean</u>	<u>Std. Dev.</u>	<u>Q1</u>	<u>Median</u>	<u>Q3</u>
<i>PIN</i>	0.199	0.091	0.130	0.182	0.254
<i>MVE</i>	3,239.14	18,632.68	74.62	288.47	1,103.40
<i>Analyst</i>	5.901	7.471	0.000	3.000	8.000
<i>InstOwn</i>	0.408	0.256	0.180	0.395	0.620
<i>Dispersion</i>	1.581	1.525	0.000	1.523	2.753

**Panel B: Regression Analysis, Dependent Variable is PIN**

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
Intercept	0.380	0.381	0.381	0.380	0.387	0.396	0.380	0.390
	<i>87.00</i>	<i>86.90</i>	<i>86.88</i>	<i>87.01</i>	<i>83.59</i>	<i>41.89</i>	<i>86.94</i>	<i>73.62</i>
<i>Commit</i>	-0.008	-0.002	0.013	-0.007	--	--	--	--
	<i>-1.47</i>	<i>-0.34</i>	<i>1.52</i>	<i>-1.39</i>	--	--	--	--
<i>Open4</i>	--	--	--	--	0.006	0.048	-0.001	0.003
	--	--	--	--	<i>0.65</i>	<i>1.37</i>	<i>-0.23</i>	<i>0.22</i>
<i>FS_Ratio</i>	--	--	--	--	-0.017	-0.019	0.021	-0.027
	--	--	--	--	<i>-5.10</i>	<i>-1.85</i>	<i>2.45</i>	<i>-3.48</i>
<i>Open4*FS_Ratio</i>	--	--	--	--	-0.006	-0.058	0.006	-0.004
	--	--	--	--	<i>-0.50</i>	<i>-1.41</i>	<i>0.29</i>	<i>-0.14</i>
<i>lnMVE</i>	-0.028	-0.028	-0.028	-0.028	-0.028	-0.028	-0.028	-0.028
	<i>-31.01</i>	<i>-31.00</i>	<i>-31.10</i>	<i>-31.01</i>	<i>-31.24</i>	<i>-31.37</i>	<i>-31.27</i>	<i>-31.33</i>
<i>lnAnalyst</i>	-0.007	-0.007	-0.007	-0.007	-0.007	-0.007	-0.007	-0.007
	<i>-4.84</i>	<i>-4.86</i>	<i>-4.86</i>	<i>-4.85</i>	<i>-4.58</i>	<i>-4.75</i>	<i>-4.96</i>	<i>-4.56</i>
<i>InstOwn</i>	-0.013	-0.013	-0.013	-0.013	-0.013	-0.013	-0.014	-0.012
	<i>-2.38</i>	<i>-2.37</i>	<i>-2.41</i>	<i>-2.38</i>	<i>-2.36</i>	<i>-2.26</i>	<i>-2.45</i>	<i>-2.24</i>
<i>Dispersion</i>	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	<i>-1.13</i>	<i>-1.17</i>	<i>-1.21</i>	<i>-1.14</i>	<i>-0.94</i>	<i>-1.06</i>	<i>-1.10</i>	<i>-1.04</i>
Exchange Indicators?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53

Sample description and variable definitions: The sample consists of 3,082 firms with required earnings announcement data in each quarter from October 1, 1999 to September 30, 2000. Data are also required to compute PIN scores and control variables. *Commit* = 1 if *Open4* = 1 and either *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio* is greater than the sample median, and 0 otherwise, where *Open4* = 1 if the firm hosts open calls in each of four quarters. *FS\_Ratio* is either the *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio*, depending on the column heading. *PIN* = the annual average of four quarterly PIN scores for 2000; *lnMVE* = the log of market value of equity at the beginning of fiscal year 2000; *lnAnalyst* = the log of the number of analyst earnings estimates for fiscal year 2000; *InstOwn* = the percentage institutional ownership at the beginning of 2000; and *Dispersion* = the log of (1 + (1/ standard deviation of analyst earnings forecasts for 2000)). See Table 1 for other variable definitions.

a - Panel A reports descriptive statistics for the sample. Panel B reports the coefficient estimates and robust t-statistics obtained from OLS regressions of *PIN* on commitment and control variables. Coefficients and t-statistics on exchange indicator variables are suppressed.

**TABLE 4**  
**Cross Sectional Analysis: Commitment and Cost of Capital (Pre-Reg FD)**

Panel A: Descriptive Statistics, N=687 <sup>a</sup>

	Commit = 1		Mean	Std. Dev.	Q1	Median	Q3
	Number	Percent					
<i>Commit (BS)</i>	42	6.1%					
<i>Commit (IS)</i>	41	6.0%					
<i>Commit (SCF)</i>	13	1.9%					
<i>Commit (Total)</i>	44	6.4%					
<i>CofC</i>			0.196	0.092	0.133	0.190	0.248
<i>AQ</i>			0.037	0.027	0.020	0.029	0.046
<i>Beta</i>			1.029	0.500	0.694	0.955	1.278
<i>MVE</i>			9,748.63	33,115.40	533.75	1,475.38	5,119.47
<i>BTM</i>			0.529	0.469	0.213	0.420	0.729

Panel B: Regression Analysis, Dependent Variable is *CofC*

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
Intercept	0.282	0.284	0.284	0.283	0.271	0.264	0.280	0.262
	16.95	17.08	17.13	16.97	15.17	9.76	16.83	13.81
<i>Commit</i>	-0.016	-0.001	0.036	-0.014	--	--	--	--
	-1.40	-0.12	2.31	-1.24	--	--	--	--
<i>Open4</i>	--	--	--	--	0.020	0.028	-0.010	0.009
	--	--	--	--	0.94	0.29	-0.91	0.27
<i>FS_Ratio</i>	--	--	--	--	0.022	0.024	0.038	0.050
	--	--	--	--	2.41	0.95	2.27	2.81
<i>Open4*FS_Ratio</i>	--	--	--	--	-0.047	-0.039	0.054	-0.034
	--	--	--	--	-1.54	-0.34	1.37	-0.57
<i>AQ</i>	0.307	0.304	0.303	0.306	0.295	0.301	0.301	0.294
	2.28	2.26	2.24	2.27	2.21	2.23	2.24	2.21
<i>Beta</i>	0.002	0.001	0.001	0.002	0.000	0.001	0.002	0.0001
	0.26	0.16	0.11	0.25	0.01	0.15	0.32	0.02
<i>lnMVE</i>	-0.007	-0.007	-0.007	-0.007	-0.006	-0.007	-0.007	-0.007
	-3.08	-3.17	-3.19	-3.09	-2.78	-3.10	-3.25	-2.96
<i>lnBTM</i>	0.048	0.048	0.048	0.048	0.049	0.049	0.047	0.048
	9.63	9.62	9.59	9.63	9.76	9.66	9.42	9.67
$R^2$	0.31	0.31	0.31	0.31	0.32	0.31	0.32	0.32

Sample description and variable definitions: The sample consists of 687 firms with required earnings announcement data in each quarter from October 1, 1999 to September 30, 2000. Data are also required to compute Value Line costs of capital and control variables. *Commit* = 1 if *Open4* = 1 and either *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio* is greater than the median, and 0 otherwise, where *Open4* = 1 if the firm hosts open calls in each of four quarters. *FS\_Ratio* is either the *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio*, depending on the column heading. *CofC* = the annual average of four quarterly cost of capital estimates for 2000; *AQ* = total accruals quality, estimated by industry cross-section; *Beta* = CAPM beta for the prior 60 months; *lnMVE* = log of market value of equity at the beginning of fiscal year 2000; *lnBTM* = log of the book-to-market ratio at the beginning of fiscal year 2000. See Table 1 for other variable definitions.

a - Panel A reports descriptive statistics for the sample. Panel B reports the coefficient estimates and robust t-statistics obtained from OLS regressions of *CofC* on commitment and control variables.

**TABLE 5**  
**Time Series Analysis: Switch from Closed Earnings Call to Open Earnings Call (Pre-Reg FD)**

Panel A: Before & After Descriptive Statistics <sup>a</sup>						
	<i>Spread, N=312</i>		<i>PIN, N=682</i>		<i>CofC, N=259</i>	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
Before Switch, Raw	0.0086	0.0059	0.163	0.147	0.190	0.187
After Switch, Raw	0.0088	0.0059	0.161	0.142	0.190	0.189
Before Switch, Market-Adjusted	-0.0047	-0.0073	-0.052	-0.052	0.006	0.007
After Switch, Market-Adjusted	-0.0047	-0.0075	-0.056	-0.059	-0.006	-0.007

Panel B: Changes Analysis (Market-Adjusted)						
	$\Delta Spread$		$\Delta PIN$		$\Delta CofC$	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
Full Sample of Switch Events	-0.00001	-0.0003 ***	-0.004	-0.006 **	-0.012 **	-0.010 **
Subsequent Call Not Open	-0.0003	-0.0004 ***	-0.003	-0.006 *	-0.004	-0.003
Subsequent Call Open	0.0001	-0.0003 ***	-0.004	-0.005 *	-0.014 ***	-0.012 ***
Subsequent Call is Open and <i>BS_Ratio</i> Above the Median	0.0003	-0.0003 ***	-0.014 **	-0.011 ***	-0.005	-0.008

Sample description and variable definitions: The sample consists of firms that switch from hosting a closed earnings call in one quarter to hosting an open earnings call in the following quarter. *BS\_Ratio* is defined in Table 1. *Spread* = relative bid-ask spread; *PIN* = quarterly PIN estimate; *CofC* = quarterly Value Line cost of capital estimate.  $\Delta Spread$  = change in *Spread* from before to after the switch;  $\Delta PIN$  = change in *PIN* from before to after the switch;  $\Delta CofC$  = change in *CofC* from before to after the switch. A timeline of variable measurement is presented in Figure 1.

a - Panel A reports descriptive statistics of relative bid-ask spread, PIN, and Value Line cost of capital before and after the switch to open calls. Panel B reports changes in the measures on further partitions the sample.

\*, \*\*, \*\*\* indicates significance at the .10, .05, and .01 levels, respectively, using one-tailed tests of significance (t-tests for differences in means and Wilcoxon signed-rank tests for medians).

**TABLE 6**  
**Time Series Analysis: Switch from Open Earnings Call to Closed Earnings Call (Pre-Reg FD)**

Panel A: Before & After Descriptive Statistics <sup>a</sup>						
	<i>Spread, N=171</i>		<i>PIN, N=367</i>		<i>CofC, N=137</i>	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
Before Switch, Raw	0.0079	0.0060	0.159	0.147	0.185	0.176
After Switch, Raw	0.0079	0.0056	0.158	0.142	0.205	0.200
Before Switch, Market-Adjusted	-0.0054	-0.0071	-0.055	-0.057	0.000	-0.010
After Switch, Market-Adjusted	-0.0056	-0.0079	-0.060	-0.057	0.008	-0.001
Panel B: Changes Analysis (Market-Adjusted)						
	$\Delta Spread$		$\Delta PIN$		$\Delta CofC$	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
Full Sample of Switch Events	-0.0002	-0.0003 ***	-0.005 *	-0.007 ***	0.007	0.002
Subsequent Call Not Closed	-0.0002	-0.0004 ***	-0.003	-0.008 **	0.003	-0.003
Subsequent Call Closed	-0.0001	-0.0002	-0.007 **	-0.005 *	0.012	0.014
Subsequent Call is Closed and <i>BS_Ratio</i> Below the Median	0.0007 *	0.0000	0.002	0.003	0.010	0.008

Sample description and variable definitions: The sample consists of firms that switch from hosting an open earnings call in one quarter to hosting a closed earnings call in the following quarter. *BS\_Ratio* is defined in Table 1. *Spread* = relative bid-ask spread; *PIN* = quarterly PIN estimate; *CofC* = quarterly Value Line cost of capital estimate.  $\Delta Spread$  = change in *Spread* from before to after the switch;  $\Delta PIN$  = change in *PIN* from before to after the switch;  $\Delta CofC$  = change in *CofC* from before to after the switch. A timeline of variable measurement is presented in Figure 1.

a - Panel A reports descriptive statistics of relative bid-ask spread, PIN, and Value Line cost of capital before and after the switch to closed calls. Panel B reports changes in the measures on further partitions the sample.

\*, \*\*, \*\*\* indicates significance at the .10, .05, and .01 levels, respectively, using one-tailed tests of significance (t-tests for differences in means and Wilcoxon signed-rank tests for medians).

TABLE 7

**Descriptive Data for Earnings Announcement Conference Calls and Level of Financial Statement Detail in Earnings Releases (Post-Reg FD)**

Panel A: Descriptive Statistics <sup>a</sup>

	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Q1</u>	<u>Median</u>	<u>Q3</u>
<i>Disc_QA</i>	3,090	1.17	18.64	-12.81	0.63	14.95
<i>QA_Min</i>	3,090	28.86	11.50	20.62	28.31	36.14
<i>%QA</i>	3,090	0.56	0.14	0.46	0.56	0.65
<i>BS_Ratio</i>	3,090	0.68	0.31	0.47	0.79	0.93
<i>IS_Ratio</i>	3,090	0.87	0.09	0.84	0.87	0.94
<i>SCF_Ratio</i>	3,090	0.24	0.38	0.00	0.00	0.50
<i>Total_Ratio</i>	3,090	0.56	0.22	0.42	0.53	0.70

Panel B: Univariate Correlations (Pearson Below Diagonal, Spearman Above Diagonal)

	<u>Disc_QA</u>	<u>QA_Min</u>	<u>%QA</u>	<u>BS_Ratio</u>	<u>IS_Ratio</u>	<u>SCF_Ratio</u>	<u>Total_Ratio</u>
<i>Disc_QA</i>	1.000	0.853 <.0001	0.686 <.0001	0.039 0.030	0.042 0.019	0.026 0.142	0.045 0.013
<i>QA_Min</i>	0.834 <.0001	1.000	0.721 <.0001	0.000 0.989	0.051 0.004	0.095 <.0001	0.055 0.002
<i>%QA</i>	0.690 <.0001	0.735 <.0001	1.000	-0.027 0.132	0.021 0.237	0.010 0.563	-0.013 0.457
<i>BS_Ratio</i>	0.045 0.012	-0.005 0.791	-0.031 0.083	1.000	0.166 <.0001	0.278 <.0001	0.793 <.0001
<i>IS_Ratio</i>	0.027 0.130	0.016 0.381	0.010 0.571	0.224 <.0001	1.000	0.365 <.0001	0.395 <.0001
<i>SCF_Ratio</i>	0.019 0.298	0.079 <.0001	-0.001 0.951	0.343 <.0001	0.310 <.0001	1.000	0.723 <.0001
<i>Total_Ratio</i>	0.037 0.038	0.055 0.002	-0.013 0.474	0.740 <.0001	0.428 <.0001	0.875 <.0001	1.000

**TABLE 7 (continued)**

Panel C: Comparison of Pre-Reg FD Open Firms to Post-Reg FD Openness Measures

<u>Firm Avgs /</u> <b>Post-Reg FD</b>		<b>Pre-Reg FD</b>	
		<u>No Open</u> <u>Calls</u> (N=693)	<u>&gt;=1 Open</u> <u>Call</u> (N=605)
<i>Disc_QA</i>	Mean	0.926	2.211
	Median	0.469	1.605
<i>QA_Min</i>	Mean	28.421	29.763 **
	Median	28.105	29.594 +++
<i>%QA</i>	Mean	0.563	0.557
	Median	0.563	0.562

Sample description and variable definition: The sample consists of 3,090 firm-year observations for 2003 and 2004, obtained from Thomson's StreetEvents database, which contains conference call information, including the date of the call and the number of question-and-answer minutes on the call. To be included in the sample, firms must have data required to compute measures for openness (*Disc\_QA* and *QA\_Min*) and press release ratios for at least three quarters in a given year. *Disc\_QA* = the annual average of quarterly residuals from regressions of the number of conference call discussion minutes on proxies for analyst demand; *QA\_Min* = the annual average of quarterly totals of conference call discussion minutes; *%QA* = the annual average of quarterly proportions of *QA\_Min* to total call minutes. *BS\_Ratio*, *IS\_Ratio*, and *SCF\_Ratio* are defined in Table 1.

a - Panel A reports descriptive statistics on degrees of conference call openness and press release measures. Panel B report pairwise correlations between degrees of openness and press release measures. Panel C reports differences in conference call measures for pre-Reg FD open firms.

\*\*\*, \*\*, \* and +, ++, + Difference in means and medians are significant at the .01, .05, or .10 level or better, respectively. t-tests for difference in means and Wilcoxon rank-sum tests for differences in median. Tests are two-tailed.

**TABLE 8**  
**Cross Sectional Analysis: Commitment and Bid-Ask Spread (Post-Reg FD)**

Panel A: Descriptive Statistics, N=1,284 <sup>a</sup>

	<i>QA_Min</i>		<i>Disc_QA</i>	
	Commit = 1		Commit = 1	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
<i>Commit (BS)</i>	323	25.2%	326	25.4%
<i>Commit (IS)</i>	326	25.4%	328	25.5%
<i>Commit (SCF)</i>	270	21.0%	261	20.3%
<i>Commit (Total)</i>	328	25.5%	324	25.2%

	<u>Mean</u>	<u>Std. Dev.</u>	<u>Q1</u>	<u>Median</u>	<u>Q3</u>
<i>Spread</i>	0.002	0.003	0.001	0.001	0.002
<i>lnSize</i>	21.454	1.399	20.471	21.328	22.253
<i>lnPrice</i>	3.240	0.671	2.861	3.317	3.694
<i>lnVolume</i>	-5.159	0.602	-5.567	-5.158	-4.786
<i>lnVolatility</i>	-3.973	0.358	-4.234	-3.988	-3.754

Panel B: Regression Analysis. Dependent Variable is *Spread* and Commitment is Measured based on *QA\_Min*

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
<i>Intercept</i>	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
	15.03	14.51	14.40	14.71	12.89	13.94	14.07	13.74
<i>Commit</i>	-0.0001	0.0001	0.0002	0.0002	--	--	--	--
	-0.40	0.56	0.81	0.71	--	--	--	--
<i>QA_Dum</i>	--	--	--	--	0.0002	-0.0001	0.00001	-0.00004
	--	--	--	--	0.79	-0.18	0.11	-0.15
<i>FS_Ratio</i>	--	--	--	--	-0.0001	0.0000	-0.0003	-0.0005
	--	--	--	--	-0.48	0.07	-2.04	-1.47
<i>QA_Dum*FS_Ratio</i>	--	--	--	--	-0.0002	0.0003	0.0004	0.0003
	--	--	--	--	-0.55	0.35	1.53	0.69
<i>lnSize</i>	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	-13.43	-12.62	-11.63	-12.16	-11.36	-11.56	-11.30	-11.66
<i>lnPrice</i>	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	-3.13	-3.05	-3.06	-3.05	-3.12	-3.08	-3.17	-3.15
<i>lnVolume</i>	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	-5.93	-5.79	-5.79	-5.77	-5.68	-5.65	-5.66	-5.65
<i>lnVolatility</i>	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
	5.18	5.04	5.28	5.21	5.06	5.07	5.18	5.13
R <sup>2</sup>	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41

**TABLE 8 (continued)**

Panel C: Regression Analysis, Dependent Variable is *Spread* and Commitment is Measured based on *Disc\_QA*

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
<i>Intercept</i>	0.020 14.85	0.020 15.16	0.020 15.24	0.020 15.35	0.020 13.85	0.020 15.05	0.020 15.27	0.020 14.79
<i>Commit</i>	-0.0001 -0.64	0.0001 0.26	0.0001 0.27	0.0001 0.36	-- --	-- --	-- --	-- --
<i>DiscQA_Dum</i>	-- --	-- --	-- --	-- --	-0.00002 -0.07	-0.0004 -0.57	-0.0001 -0.97	-0.0002 -0.85
<i>FS_Ratio</i>	-- --	-- --	-- --	-- --	-0.0002 -0.80	-0.0004 -0.07	-0.0003 -1.95	-0.0005 -1.61
<i>DiscQA_Dum*FS_Ratio</i>	-- --	-- --	-- --	-- --	-0.00001 -0.04	0.0004 0.50	0.0003 1.27	0.0003 0.81
<i>lnSize</i>	-0.001 -13.29	-0.001 -13.28	-0.001 -12.82	-0.001 -13.13	-0.001 -13.11	-0.001 -13.23	-0.001 -13.08	-0.001 -13.42
<i>lnPrice</i>	-0.001 -3.15	-0.001 -2.98	-0.001 -3.06	-0.001 -3.01	-0.001 -3.07	-0.001 -3.03	-0.001 -3.14	-0.001 -3.10
<i>lnVolume</i>	-0.002 -5.99	-0.002 -5.83	-0.002 -5.87	-0.002 -5.86	-0.002 -5.82	-0.002 -5.80	-0.002 -5.81	-0.002 -5.79
<i>lnVolatility</i>	0.003 5.18	0.003 4.99	0.003 5.29	0.003 5.19	0.003 5.00	0.003 5.02	0.003 5.15	0.003 5.07
R <sup>2</sup>	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41

Sample description and variable definitions: The sample consists of 1,284 NYSE firm-year observations with required data to compute spreads and control variables for 2003 and 2004. *Commit* = 1 if *Disc\_QA* (or *QA\_Min*) is greater than the sample median and either *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio* is greater than its respective sample median. *QA\_Dum* (*DiscQA\_Dum*) = 1 if *QA\_Min* (*Disc\_QA*) is greater than the sample median, and 0 otherwise. *Spread* = the mean daily absolute bid-ask spread averaged over each year; *lnSize* = the average market value of equity for each year; *lnPrice* = the log of the average price for each year; *lnVolume* = the log of the average daily share turnover for each year; *lnVolatility* = the log of return volatility for each year. See Tables 1 and 7 for other variable definitions.

a - Panel A reports descriptive statistics for the sample. Panel B reports the coefficient estimates and t-statistics obtained from OLS regressions of *Spread* on commitment and control variables, when measuring commitment based on *QA\_Min*. Panel C reports the coefficient estimates and t-statistics obtained from OLS regressions of *Spread* on commitment and control variables, when measuring commitment based on *Disc\_QA*. Robust t-statistics are computed based on standard errors clustered by firm. *Year2003* dummy is included but not reported.

**TABLE 9**  
**Cross Sectional Analysis: Commitment and PIN (Post-Reg FD)**

Panel A: Descriptive Statistics, N=2,700 <sup>a</sup>

	<i>QA_Min</i>		<i>Disc_QA</i>	
	Commit = 1		Commit = 1	
	Number	Percent	Number	Percent
<i>Commit (BS)</i>	676	25.0%	700	25.9%
<i>Commit (IS)</i>	716	26.5%	716	26.5%
<i>Commit (SCF)</i>	540	20.0%	507	18.8%
<i>Commit (Total)</i>	703	26.0%	711	26.3%

	<u>Mean</u>	<u>Std. Dev.</u>	<u>Q1</u>	<u>Median</u>	<u>Q3</u>
<i>PIN</i>	0.161	0.068	0.111	0.153	0.207
<i>MVE</i>	4,149.14	16,355.00	329.36	820.86	2,419.16
<i>Analyst</i>	11.077	8.618	5.000	9.000	15.000
<i>InstOwn</i>	0.622	0.219	0.478	0.656	0.789
<i>Dispersion</i>	2.742	1.225	1.972	2.811	3.592

Panel B: Regression Analysis, Dependent Variable is *PIN* and Commitment is Measured based on *QA\_Min*

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
<i>Intercept</i>	0.363	0.363	0.363	0.363	0.370	0.350	0.363	0.365
	74.00	73.84	73.78	74.05	63.12	24.66	73.04	62.82
<i>Commit</i>	-0.002	0.002	0.001	-0.001	--	--	--	--
	-1.43	1.07	0.29	-0.46	--	--	--	--
<i>QA_Dum</i>	--	--	--	--	-0.002	0.010	0.000	-0.0010
	--	--	--	--	-0.62	0.66	0.00	-0.18
<i>FS_Ratio</i>	--	--	--	--	-0.009	0.014	0.001	-0.006
	--	--	--	--	-2.39	0.98	0.15	-1.05
<i>QA_Dum*FS_Ratio</i>	--	--	--	--	0.003	-0.012	-0.001	0.001
	--	--	--	--	0.69	-0.68	-0.23	0.15
<i>lnMVE</i>	-0.019	-0.019	-0.019	-0.019	-0.020	-0.019	-0.019	-0.019
	-25.07	-25.14	-25.21	-25.13	-24.87	-24.76	-25.16	-24.97
<i>lnAnalyst</i>	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020
	-12.27	-12.62	-12.50	-12.37	-12.23	-12.29	-12.27	-12.24
<i>InstOwn</i>	0.005	0.004	0.005	0.005	0.005	0.004	0.005	0.005
	1.09	0.91	0.98	1.03	1.11	0.93	1.00	1.09
<i>Dispersion</i>	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	2.36	2.34	2.35	2.35	2.58	2.31	2.33	2.43
Exchange Indicators?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70

**TABLE 9 (continued)**

Panel C: Regression Analysis. Dependent Variable is *PIN* and Commitment is Measured based on *Disc\_QA*

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
<i>Intercept</i>	0.363 73.45	0.363 73.80	0.363 73.96	0.363 73.64	0.370 65.64	0.355 25.97	0.363 73.90	0.367 65.10
<i>Commit</i>	-0.002 -1.38	0.001 0.80	0.0003 0.18	-0.001 -0.56	-- --	-- --	-- --	-- --
<i>DiscQA_Dum</i>	-- --	-- --	-- --	-- --	-0.003 -0.91	-0.001 -0.03	-0.00200 -1.25	-0.0050 -1.12
<i>FS_Ratio</i>	-- --	-- --	-- --	-- --	-0.009 -2.44	0.009 0.63	-0.001 -0.50	-0.008 -1.54
<i>DiscQA_Dum*FS_Ratio</i>	-- --	-- --	-- --	-- --	0.003 0.56	-0.001 -0.08	0.003 0.72	0.005 0.80
<i>lnMVE</i>	-0.019 -25.01	-0.019 -25.04	-0.019 -25.11	-0.019 -25.00	-0.020 -24.88	-0.019 -24.77	-0.019 -25.13	-0.019 -24.95
<i>lnAnalyst</i>	-0.020 -12.50	-0.020 -12.60	-0.020 -12.57	-0.020 -12.53	-0.020 -12.43	-0.020 -12.54	-0.020 -12.51	-0.020 -12.48
<i>InstOwn</i>	0.005 1.10	0.004 0.92	0.005 0.98	0.005 1.04	0.006 1.20	0.005 1.03	0.005 1.09	0.006 1.17
<i>Dispersion</i>	0.002 2.40	0.002 2.33	0.002 2.34	0.002 2.36	0.002 2.61	0.002 2.36	0.002 2.41	0.002 2.49
Exchange Indicators?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70

Sample description and variable definitions: The sample consists of 2,700 firm-year observations with required data to compute PIN scores and control variables for 2003 and 2004. *Commit* = 1 if *Disc\_QA* (or *QA\_Min*) is greater than the sample median and either *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio* is greater than its respective sample median. *QA\_Dum* (*DiscQA\_Dum*) = 1 if *QA\_Min* (*Disc\_QA*) is greater than the sample median, and 0 otherwise. *PIN* = the annual average of four quarterly PIN scores for each year; *lnMVE* = the log of market value of equity at the beginning of each year; *lnAnalyst* = the log of the number of analyst earnings estimates for each year; *InstOwn* = the percentage institutional ownership at the beginning of each year; and *Dispersion* = the log of (1 + (1/ standard deviation of analyst earnings forecasts for each year)). See Tables 1 and 7 for other variable definitions.

a - Panel A reports descriptive statistics for the sample. Panel B reports the coefficient estimates and t-statistics obtained from OLS regressions of PIN on commitment and control variables, when measuring commitment based on *QA\_Min*. Panel C reports the coefficient estimates and t-statistics obtained from OLS regressions of Spread on commitment and control variables, when measuring commitment based on *Disc\_QA*. Robust t-statistics are computed based on standard errors clustered by firm. *Year2003* dummy is included but not reported.

**TABLE 10**  
**Cross Sectional Analysis: Commitment and Cost of Capital (Post-Reg FD)**

Panel A: Descriptive Statistics, N=1,192 <sup>a</sup>

	<i>QA_Min</i>		<i>Disc_QA</i>	
	Commit = 1		Commit = 1	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
<i>Commit (BS)</i>	302	25.4%	310	26.0%
<i>Commit (IS)</i>	305	26.1%	300	25.2%
<i>Commit (SCF)</i>	268	22.5%	257	21.6%
<i>Commit (Total)</i>	309	25.9%	307	25.8%

	<u>Mean</u>	<u>Std. Dev.</u>	<u>Q1</u>	<u>Median</u>	<u>Q3</u>
<i>CofC</i>	0.142	0.071	0.091	0.133	0.180
<i>Accruals Quality</i>	0.039	0.027	0.021	0.032	0.049
<i>Beta</i>	1.164	0.883	0.532	0.922	1.601
<i>MVE</i>	7,127.71	24,298.79	711.54	1,603.35	4,498.88
<i>BTM</i>	0.498	0.365	0.271	0.410	0.614

Panel B: Regression Analysis. Dependent Variable is *CofC* and Commitment is Measured based on *QA\_Min*

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
<i>Intercept</i>	0.123	0.125	0.124	0.124	0.139	0.117	0.125	0.133
	8.00	8.17	8.07	8.10	7.80	3.20	8.12	7.72
<i>Commit</i>	-0.011	-0.005	-0.003	-0.003	--	--	--	--
	-2.34	-1.22	-0.61	-0.65	--	--	--	--
<i>QA_Dum</i>	--	--	--	--	-0.011	0.042	-0.007	-0.014
	--	--	--	--	-1.12	1.01	-1.29	-1.24
<i>FS_Ratio</i>	--	--	--	--	-0.022	0.009	-0.003	-0.018
	--	--	--	--	-1.98	0.25	-0.42	-1.21
<i>QA_Dum*FS_Ratio</i>	--	--	--	--	0.010	-0.053	0.007	0.016
	--	--	--	--	0.74	-1.13	0.70	0.89
<i>AQ</i>	0.107	0.098	0.100	0.101	0.109	0.099	0.101	0.100
	1.09	1.00	1.03	1.04	1.13	1.00	1.04	1.03
<i>Beta</i>	0.013	0.012	0.012	0.012	0.014	0.012	0.013	0.013
	3.77	3.51	3.56	3.58	3.84	3.53	3.58	3.64
<i>lnMVE</i>	-0.0001	-0.0002	-0.0002	-0.0002	-0.0003	-0.0002	0.000	0.0001
	-0.02	-0.12	-0.12	-0.15	-0.12	-0.07	0.00	0.07
<i>lnBTM</i>	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
	3.76	3.85	3.85	3.82	3.85	3.82	3.81	3.85
<i>R<sup>2</sup></i>	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

**TABLE 10 (continued)**

Panel C: Regression Analysis. Dependent Variable is *CofC* and Commitment is Measured based on *Disc\_QA*

	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>	<u>BS</u>	<u>IS</u>	<u>SCF</u>	<u>Total</u>
<i>Intercept</i>	0.127	0.127	0.125	0.126	0.141	0.124	0.128	0.135
	8.32	8.26	8.20	8.24	8.00	3.60	8.31	7.82
<i>Commit</i>	-0.010	-0.006	-0.003	-0.003	--	--	--	--
	-1.97	-1.34	-0.51	-0.65	--	--	--	--
<i>DiscQA_Dum</i>	--	--	--	--	-0.010	0.036	-0.006	-0.012
	--	--	--	--	-0.99	0.84	-1.11	1.00
<i>FS_Ratio</i>	--	--	--	--	-0.021	0.005	-0.002	-0.015
	--	--	--	--	-1.99	0.14	-0.23	-1.11
<i>DiscQA_Dum*FS_Ratio</i>	--	--	--	--	0.008	-0.046	0.004	0.012
	--	--	--	--	0.62	-0.96	0.42	0.66
<i>AQ</i>	0.104	0.099	0.100	0.101	0.110	0.099	0.101	0.101
	1.07	1.01	1.03	1.03	1.15	1.01	1.04	1.04
<i>Beta</i>	0.013	0.012	0.012	0.012	0.013	0.012	0.012	0.013
	3.71	3.49	3.54	3.57	3.83	3.50	3.56	3.62
<i>lnMVE</i>	-0.0005	-0.0004	-0.0003	-0.0004	-0.001	-0.001	-0.0004	-0.0003
	-0.26	-0.22	-0.18	0.22	-0.31	-0.26	-0.22	-0.14
<i>lnBTM</i>	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
	3.79	3.86	3.85	3.83	3.87	3.85	3.83	3.87
$R^2$	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

Sample description and variable definitions: The sample consists of 1,192 firm-year observations with required data to compute Value Line costs of capital and control variables for 2003 and 2004. *Commit* = 1 if *Disc\_QA* (or *QA\_Min*) is greater than the sample median and either *BS\_Ratio*, *IS\_Ratio*, *SCF\_Ratio*, or *Total\_Ratio* is greater than its respective sample median. *QA\_Dum* (*DiscQA\_Dum*) = 1 if *QA\_Min* (*Disc\_QA*) is greater than the sample median, and 0 otherwise. *CofC* = the annual average of four quarterly cost of capital estimates for each year; *AQ* = total accruals quality, estimated by industry cross-section; *Beta* = CAPM beta for the prior 60 months; *lnMVE* = log of market value of equity at the beginning of each year; *lnBTM* = log of the book-to-market ratio at the beginning of each year. See Tables 1 and 7 for other variable definitions.

a - Panel A reports descriptive statistics for the sample. Panel B reports the coefficient estimates and t-statistics obtained from OLS regressions of *CofC* on commitment and control variables, when measuring commitment based on *QA\_Min*. Panel C reports the coefficient estimates and t-statistics obtained from OLS regressions of *Spread* on commitment and control variables, when measuring commitment based on *Disc\_QA*. Robust t-statistics are computed based on standard errors clustered by firm. *Year2003* dummy is included but not reported.

**TABLE 11**

**Cross-Sectional Analysis of Commitment and Capital Market Outcomes: Isolating Consensus & Comparison Object Consensus (Pre-Reg FD)**

	Consensus			Comparison Object Consensus		
	Spread	PIN	CofC	Spread	PIN	CofC
Intercept	0.084 <i>20.06</i>	0.386 <i>81.95</i>	0.271 <i>14.77</i>	0.061 <i>16.05</i>	0.334 <i>32.91</i>	0.299 <i>11.44</i>
<i>Call4</i>	-0.001 <i>-1.86</i>	-0.010 <i>-2.86</i>	0.015 <i>1.57</i>	--	--	--
<i>Open4</i>	0.0003 <i>0.30</i>	0.002 <i>0.25</i>	0.027 <i>1.22</i>	0.001 <i>1.00</i>	0.022 <i>2.36</i>	0.007 <i>0.31</i>
<i>BS_Ratio</i>	-0.001 <i>-1.30</i>	-0.018 <i>-4.05</i>	0.023 <i>1.72</i>	-0.001 <i>-0.93</i>	-0.003 <i>-0.51</i>	0.011 <i>0.67</i>
<i>Call4*BS_Ratio</i>	0.0001 <i>0.11</i>	0.005 <i>0.74</i>	-0.005 <i>-0.25</i>	--	--	--
<i>Open4*BS_Ratio</i>	-0.002 <i>-0.91</i>	-0.006 <i>-0.46</i>	-0.046 <i>-1.44</i>	0.001 <i>-1.02</i>	-0.031 <i>-2.23</i>	-0.037 <i>-1.07</i>
<i>SporadicOpen</i>	--	--	--	-0.0003 <i>-0.57</i>	0.005 <i>1.03</i>	-0.013 <i>-0.90</i>
<i>SporadicOpen*BS_Ratio</i>	--	--	--	0.001 <i>0.44</i>	-0.017 <i>-1.96</i>	0.016 <i>0.64</i>
<i>Controls Included?</i>	Yes	Yes	Yes	Yes	Yes	Yes
N	1,273	3,082	687	624	1,173	388
R <sup>2</sup>	0.71	0.53	0.32	0.72	0.43	0.29

Sample description and variable definitions: The sample consists of firms with required data to compute dependent variables, commitment variables, and control variables for the period October 1, 1999 to September 30, 2000. The first three columns report results of OLS regressions of *Spread*, *PIN*, and *CofC* on measures of commitment, allowing for cross-sectional variation in consensus. These regressions are estimated on the full sample of firms. The second three columns report results of OLS regressions of *Spread*, *PIN*, and *CofC* on measures of commitment, allowing for cross-sectional variation in comparison object consensus. These regressions are estimated on a sample of firms that host earnings calls in each quarter. *Call4* = 1 if the firm hosts an earnings call in each quarter and at least one call is closed, and 0 otherwise. *SporadicOpen* = 1 if the firm hosts an open earnings call if 1, 2, or 3 quarters, and 0 otherwise. All other variables are defined in Tables 1 - 4, and relevant control variables are included, but not reported in each regression. Robust t-statistics are reported below coefficient estimates.