AN EMPIRICAL EXAMINATION OF THE COMMITMENT TO INCREASED DISCLOSURE

by

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
Business Administration in the Graduate School
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ABSTRACT

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Abstract

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.

Contents

List of Tables

List of Figures

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. 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 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. If the regulation is effective, 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, consistent with my expectations, 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 negatively 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. Overall, except for cost of capital results in the pre-Reg FD period, results are inconsistent with my expectations – disclosure of balance sheet information is negatively related to the capital market outcomes I consider, 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 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]).[1] 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 greater liquidity. Empirical research documents mixed results concerning this relation, particularly with regard to cost of capital effects.[2] In particular, I discuss research finding positive, negative, and no relations between commitment to disclosure and cost of capital, and often these mixed results are found in the same study, depending on which disclosure measure is used. This 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

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[1] 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.

[2] Appendix 1 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.

[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 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 [2008] 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.[3] On the other hand, Francis, Nanda, and Olsson [2008] 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 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.

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[3] 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.

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 as outcomes of a period (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 Chapter 3.2.

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 Chapter 3.2) 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 bid-ask 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 decreasing 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. I also examine additional capital market outcomes in addition to PIN – bid-ask spread and cost of equity capital.

3. Choice and 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 (chapter 3.1), followed by a discussion of the covariation principle and how it relates the construction of commitment variables (chapter 3.2). I conclude by discussing measures of capital market outcomes (chapter 3.3), and the process of distinguishing the portions of post-Reg FD openness subject to management discretion as opposed to analyst demand (chapter 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 rank only 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 for their sample of large stable firms 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), and Baber, Chen, and Kang [2006] show that investors make more informed interpretations of earnings announcements when balance sheets are presented. 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. [1] (My research uses attribution theory as a guide to *infer* investor perceptions of the causes of firms' 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

[1] An accessible and informative review of attribution theory is found in Forsterling [2001].

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:

Attribution	*Consensus*	*Distinctiveness*	*Consistency (Over Time & Modalities)*
Object/Target	High	High	High
Sender **(Commitment)**	Low	Low	High
Circumstance	Low	High	Low

The first empirical test of Kelley's covariation principle was conducted by McArthur [1972]. Subjects were asked whether the effect (presented below) was attributable to the object, the person, or the circumstance. The following setting is characterized by low consensus, low distinctiveness, and high consistency. Therefore, covariation principle predicts an internal, or person, attribution.

Effect:	John laughs at the comedian.
Consensus:	Hardly anyone who hears the comedian laughs at him. (*low consensus*)
Distinctiveness:	John also laughs at almost every other comedian. (*low distinctiveness*)
Consistency:	In the past John has almost always laughed at the same comedian. (*high consistency across time*)

McArthur's empirical results were consistent with the predictions of the covariation principle. Specifically, subjects who were asked to attribute the above effect to the person (John, the actor), the stimulus (the comedian), the circumstances, or any combination of the three were more likely to attribute the effect to the person (John) than to any of the other possibilities. Many studies followed McArthur's work and an empirical regularity emerged, that high consistency conditions yield results more consistent with Kelley's model. In other words, referring to the table above, research consistently found evidence of stimulus and person attributions, both of which are characterized by high consistency. Predictions for low consistency conditions

(circumstance attributions) are less likely to be supported by empirical data.[2] 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*.[3] 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

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[2] Kelley's theory has been modified in several ways. For instance, some researchers distinguish between intentional and unintentional behavior (see, for example, Kruglanski [1975] and Malle [2003]), arguing that the covariation principle applies to unintentional behaviors, such as feelings and emotions, and not to intentional behaviors, such as voluntary actions. The crux of their argument is that intentional actions are, by definition, attributed internally, and are to some extent *always* a person attribution. Even with this critique, researchers acknowledge that covariation information can still be used to assess *motivations* – in my case, the motivation being to reduce information asymmetry as opposed to, say, increase analyst following or influence stock price. In addition, an extension to Kelley's model is the additional information category of *comparison object consensus*, which extends the idea of consensus to *all* objects, not only the object associated with a particular effect. Applied to the example presented at the outset of this section, low comparison object consensus would be reflected by the observation that hardly anyone shares personal information with *Person C*.

[3] 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.

"object", or "target", as the *collection of disclosure recipients*, including 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.[4] Disclosure behavior that does not differ across recipients exhibits low distinctiveness, consistent with an internal attribution, or commitment. Disclosure behavior that differs across recipients exhibits high distinctiveness. Before Reg FD, I measure openness as an indicator variable, *Open*, equal to 1 if the conference call is open and 0 otherwise. 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.[5]

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

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[4] This interpretation of distinctiveness differs from that of Koonce and Mercer [2005], discussed in footnote 3. 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 (investors, potential investors and their advisors), 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).

[5] 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.

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 high distinctiveness, indicating less disclosure commitment. Second, I measure openness as the discretionary portion of *QA_Min*, *Disc_QA*. *Disc_QA* is calculated as the residual from a regression of *QA_Min* on proxies for analyst demand. This measure is discussed in Chapter 3.4.

There are other potential measures of distinctiveness beside the open-closed dichotomy and number of Q&A minutes. First, before Reg FD, distinctiveness can theoretically be measured by the number of analysts invited to a closed call and the number of Q&A minutes for open calls. While both of these measures could be sharper in capturing distinctiveness, these data are not available prior to Reg FD. Second, a potentially better indicator of low distinctiveness after Reg FD is the posting of earnings call transcripts on firm websites. I do not use this measure because, based on a review of a sample of company websites, I find that firms do not generally post archived transcripts dating to the 2003 – 2004 time period. In addition, these data are not available in machine-readable form for large samples. Third, another measure of

distinctiveness could be the speed with which earnings information is impounded into price (see, for example, Francis, Nanda, and Wang [2006] and Heflin, Subramanyam, and Zhang [2003]). I do not use this measure because its relation to commitment is unclear. On the one hand, committed firms should have a more rapid impounding of earning information into price because of their relative openness and policy of increased disclosure. On the other hand, committed firms could have a less rapid impounding because rapid impounding implies leakage, which is indicative of greater distinctiveness, a factor negatively affecting commitment.

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 and therefore signify commitment. One aspect of consistency concerns over time behavior, which is measurable based on a firm's time series of disclosures as discussed in Chapter 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 their behavior 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).[6],[7] Specifically, following D'Souza, Ramesh, and Shen [2006], ratios based on the earnings release disclosure of financial statement information are defined as follows:

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

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

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

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

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

[6] National Investor Relations Institute [2004] recommends that firms include a complete balance sheet and a complete income statement in their earnings releases.

[7] The specific financial line items considered in the determination of potentially disclosable items are presented in Appendix 2 along with other sample selection choices.

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* and *Disc_QA* (from the Thomson StreetEvents database), and press release measures (from Compustat's Preliminary History and As First Reported databases) for at least three quarters per year.[8] Consensus concerns other firms' disclosure choices and is beyond

[8] 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 Chapter 5). 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.

management's control.[9] 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 for my study, 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 consistency and consensus, I associate commitment with firms that consistently host conference calls in the pre-Reg FD period.

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

Consensus	**Distinctiveness**	**Consistency (across modalities)**	**Consistency (across time)**
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

[9] Although consensus seems to be out of management's control, it could be a determinant of disclosure. For example, prior research shows that firms tend to disclose similar amounts and types of information as their competitors (see, for example, Botosan and Harris [2000] with regard to segment disclosure and Brown, Gordon, and Wermers [2006] with regard to capital expenditure forecasts). There could therefore be an industry determinant to commitment as I measure it using characteristics of earnings announcements and conference calls. To address this concern, I industry-adjust disclosure measures in Chapter 6.6 and conduct tests for high-technology firms in Chapter 6.2. Another factor to consider with regard to consensus is research showing that, absent disclosure costs, all but the "worst news" firms will disclose, which would yield two results – high consensus and a positive association between commitment and performance. In later tests, I show that consensus is low in the pre-Reg FD period and performance is unrelated to commitment in both the pre-Reg FD and post-Reg FD periods.

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 Trades and Quotes (TAQ) database, I measure liquidity as the daily relative bid-ask spread:

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

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 follow Brown, et al. [2004] and eliminate observations with extreme parameter estimates. 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:

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

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.

In unreported results I show that, in the pre-Reg FD sample, *Spread*, *PIN*, and *CofC* are positively correlated (Pearson correlations range from 0.38 to 0.66). In the post-Reg FD sample, *Spread* and *PIN* are positively correlated (Pearson correlation is 0.61) and *Spread* and *CofC* are positively correlated (Pearson correlation is 0.28). *PIN* and *CofC* are

not correlated in the post-Reg FD sample, suggesting that these measures are capturing different constructs for Value Line firms in 2003 - 2004.[10] One possible explanation is that *PIN* captures information asymmetry among investors while *CofC* captures information asymmetry both among investors *and* between managers and investors. In summary, because of their theoretical underpinnings and (mostly) positive correlations, I expect similar results for each measure.

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 (from the Thomson StreetEvents database), 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

[10] The lack of correlation between PIN and Cost of Capital is consistent with correlations reported in Plumlee and Botosan [2008], who report that PIN and implied cost of capital estimates are significantly correlated in 5 out of 12 years for the period 1993-2004.

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 (variables capturing analyst demand are determined based on results in Matsumoto, et al. [2006]):

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

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 *lnAF* , log of number of analysts on IBES issuing earnings forecasts for the quarter being discussed; *lnMVE*, log of market value of equity for the quarter; and *FQ4*, an indicator variable equal to 1 if the quarter is firm *i*'s 4th 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, $\hat{\varepsilon}_{i,t}$, to obtain *Disc_QA*, which represents management's average "discretionary" portion of *QA_Min* for the year.

4. Pre-Reg FD Sample: Tests and Results

In this chapter, I discuss the pre-Reg FD sample (chapter 4.1) and research design and empirical tests for that sample (chapter 4.2).

4.1 Sample

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 (press release) and As First Reported (original 10-Q) 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 earning 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.[1] There are 20,148 firm-quarters with data available to compute the balance sheet, income statement and cash flow ratios described in Chapter 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 an earnings announcement every quarter between October 1, 1999 and 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 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

[1] Inferences are unchanged if I define earnings calls as those with dates between 2 days before and 2 days after the earnings announcement date.

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 ratio 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).

Table 1: Descriptive Data: Pre-Reg FD

Panel A: Distributional Statistics[a]

	N	Mean	Std. Dev.	Min	Q1	Median	Q3	Max
Num_Calls	3,521	2.26	1.67	0.00	0.00	3.00	4.00	4.00
Num_Opens	3,521	0.76	1.29	0.00	0.00	0.00	1.00	4.00
Num_Closed	3,521	1.50	1.52	0.00	0.00	1.00	3.00	4.00
BS_Ratio	3,521	0.44	0.36	0.00	0.00	0.46	0.78	1.00
IS_Ratio	3,521	0.82	0.12	0.38	0.77	0.86	0.90	1.00
SCF_Ratio	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

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

		Number of Open Earnings Calls				
		0	1	2	3	4
N=	3,521	2,419	305	268	280	249
BS_Ratio	Mean	0.400	0.470	0.525	0.522	0.587
	Median	0.361	0.500	0.621	0.571	0.696
IS_Ratio	Mean	0.816	0.823	0.837	0.829	0.836
	Median	0.857	0.857	0.859	0.857	0.857
SCF_Ratio	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)

	Num_Calls	*Num_Opens*	*Num_Closed*	*BS_Ratio*	*IS_Ratio*	*SCF_Ratio*
Num_Calls	1.000	0.518	0.666	0.183	0.130	0.098
		<.0001	<.0001	<.0001	<.0001	<.0001
Num_Opens	0.498	1.000	-0.206	0.169	0.032	0.033
	<.0001		<.0001	<.0001	0.058	0.050
Num_Closed	0.679	-0.299	1.000	0.074	0.125	0.073
	<.0001	<.0001		<.0001	<.0001	<.0001
BS_Ratio	0.188	0.169	0.063	1.000	0.303	0.211
	<.0001	<.0001	0.000		<.0001	<.0001
IS_Ratio	0.169	0.059	0.136	0.365	1.000	0.149
	<.0001	0.000	<.0001	<.0001		<.0001
SCF_Ratio	0.085	0.035	0.064	0.234	0.141	1.000
	<.0001	0.039	0.000	<.0001	<.0001	

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.

4.2 Research Design and Empirical Tests

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 (chapter 4.2.1) and time-series tests (chapter 4.2.2) of the relation between my measure of disclosure commitment and three capital market outcome measures: liquidity, information asymmetry, and cost of capital.

4.2.1 Cross-Sectional Tests

4.2.1.1 Liquidity

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]).[2] 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 than 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

[2] In sensitivity tests, I also estimate regressions for a sample of NASDAQ firms. Results are presented in Table 16.

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.[3] 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* at the .10, .001, and .10 levels, respectively (t = -1.45, -3.08, 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

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[3] The small percentage of committed firms is surprising given the expected capital market benefits of commitment and research showing that all but the "worst news" firms will disclose. One possible explanation for this low percentage is that costs to disclosure outweigh the expected benefits for many firms. For example, ex ante information asymmetry could be acceptably low for some firms. While I do not examine firms' motivations to commit, I do attempt to control for disclosure costs econometrically using Heckman's two-step procedure (Chapter 6.2) and estimating regressions only for firms in high-technology industries (Chapter 6.2).

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 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, significant at the .10, .001, and .05 levels, 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 positively 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.[4]

[4] Because volume is an alternate measure of liquidity and it is also one of my control variables, I re-estimate the model excluding volume. Results for each measure of *Commit* are negative and significant, as expected.

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

Panel A: Descriptive Statistics, N=1,273 [a]

	Commit = 1	
	Number	Percent
Commit (BS)	53	4.2%
Commit (IS)	43	3.4%
Commit (SCF)	19	1.5%
Commit (Total)	52	4.1%

	Mean	Std. Dev.	Q1	Median	Q3
Spread	0.012	0.014	0.005	0.007	0.014
lnSize	20.639	1.811	19.374	20.550	21.750
lnPrice	2.958	0.860	2.417	3.072	3.579
lnVolume	-5.659	0.765	-6.129	-5.599	-5.169
lnVolatility	-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*
Commit	-0.001	-0.0003	-0.003	-0.001	--	--	--	--
	-1.45	*-0.42*	*-3.08*	*-1.52*	--	--	--	--
Open4	--	--	--	--	0.001	0.005	0.001	0.002
	--	--	--	--	*0.85*	*1.35*	*0.81*	*1.61*
FS_Ratio	--	--	--	--	-0.001	-0.002	-0.0001	-0.002
	--	--	--	--	*-2.09*	*-0.96*	*-0.09*	*-1.70*
*Open4*FS_Ratio*	--	--	--	--	-0.002	-0.006	-0.006	-0.005
	--	--	--	--	*-0.98*	*-1.37*	*-2.22*	*-1.74*
lnSize	-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*
lnPrice	-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*
lnVolume	-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*
lnVolatility	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^2	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71

Table 2 (continued)

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 if 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.

4.2.1.2 Information Asymmetry

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 shown by previous research 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. Following Brown, et al. [2004] 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 3,023 firms, although sample characteristics do not appear to change noticeably. In particular, Panel A reports that 4.8%, 3.9%, 0.9%, and 4.9% 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 19.8% (18.2%). Results from the regression analysis are reported in Panel B. All tests are one-tailed. *Commit* based on balance sheet information, income statement information, and total financial statement information is significantly negatively associated with PIN scores (t = -2.92, -2.17, and -2.80, respectively, significant at the .001 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* calculated based on *SCF_Ratio* is positively significantly related to PIN (t = 2.35). (This result should be interpreted with caution because less than 1% of the sample includes *any* cash flow statement information.)

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 = -5.23, -2.28, and -3.67), while the interaction effect for both *BS_Ratio* and *IS_Ratio* is negative and significant at the .10 level (t = -1.28 and -1.50, respectively). Taken as a whole, inconsistent with my hypothesis, the disclosure of balance sheet and income statement information is significantly related to information asymmetry, without regard to whether firms consistently host open calls, although there is weak evidence suggesting that the combination of open calls and either balance sheet or income statement information is significantly related to information asymmetry.

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

Panel A: Descriptive Statistics, N=3,023 [a]

	Commit = 1	
	Number	Percent
Commit (BS)	145	4.8%
Commit (IS)	117	3.9%
Commit (SCF)	28	0.9%
Commit (Total)	147	4.9%

	Mean	Std. Dev.	Q1	Median	Q3
PIN	0.198	0.089	0.129	0.182	0.254
MVE	2,446.42	11,688.73	73.79	284.24	1,046.82
Analyst	5.651	6.982	0.000	3.000	8.000
InstOwn	0.408	0.256	0.180	0.395	0.620
Dispersion	1.584	1.529	0.000	1.527	2.759

Panel B: Regression Analysis, Dependent Variable is PIN

	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.388	0.388	0.388	0.388	0.394	0.405	0.388	0.397
	97.64	*97.64*	*97.67*	*97.62*	*92.52*	*46.89*	*97.50*	*81.01*
Commit	-0.013	-0.009	0.022	-0.012	--	--	--	--
	-2.92	*-2.17*	*2.35*	*-2.80*	--	--	--	--
Open4	--	--	--	--	0.004	0.042	-0.008	-0.002
	--	--	--	--	*0.54*	*1.29*	*-2.15*	*-0.19*
FS_Ratio	--	--	--	--	-0.017	-0.021	0.020	-0.027
	--	--	--	--	*-5.23*	*-2.28*	*2.57*	*-3.67*
*Open4*FS_Ratio*	--	--	--	--	-0.014	-0.058	0.031	-0.005
	--	--	--	--	*-1.28*	*-1.50*	*1.55*	*-0.21*
lnMVE	-0.030	-0.031	-0.031	-0.030	-0.030	-0.031	-0.031	-0.030
	-37.09	*-37.17*	*-37.43*	*-37.07*	*-37.22*	*-37.16*	*-37.04*	*-37.23*
lnAnalyst	-0.009	-0.009	-0.009	-0.009	-0.009	-0.009	-0.010	-0.009
	-6.84	*-6.88*	*-6.84*	*-6.85*	*-6.60*	*-6.71*	*-6.96*	*-6.57*
InstOwn	-0.007	-0.007	-0.007	-0.007	-0.007	-0.006	-0.007	-0.006
	-1.26	*-1.27*	*-1.33*	*-1.26*	*-1.26*	*-1.13*	*-1.36*	*-1.12*
Dispersion	0.001	0.001	0.0004	0.001	0.001	0.001	0.001	0.001
	0.61	*0.59*	*0.45*	*0.61*	*0.82*	*0.67*	*0.62*	*0.69*
R^2	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58

Table 3 (continued)

Sample description and variable definitions: The sample consists of 3,023 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. Stock exchange indicator variables are included but not reported.

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

4.2.1.3 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:

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

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. Value Line (VL) data requirements reduce the sample 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.[5] The mean (median) VL cost of capital estimate 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

[5] The larger percentage of committed firms in the Cost of Capital sample, relative to the PIN sample, is attributable to the following reasons. First, because of data restrictions on PIN, there are some different, committed firms present in the Cost of Capital sample which are not present in the PIN sample. Second, Value Line firms are more likely to host calls than firms in the PIN sample. Therefore, a greater percentage of firms are committed in the Cost of Capital sample.

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, 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.[6]

The negative 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

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[6] As expected, *BS_Ratio* is negatively related to Cost of Capital in the 2003 – 2004, post-Reg FD period (see Table 10). A potential explanation for the surprising result in Table 4 is the time period considered – 1999 – 2000, which includes wide swings in the market due to the technology bubble and subsequent market decline.

*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 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 the cost of capital.[7]

In summary, inconsistent with my hypothesis, results for liquidity and information asymmetry suggest that disclosure of balance sheet information is negatively related to spread and PIN scores, regardless of whether firms host open calls. In addition, inconsistent with my hypothesis, the disclosure of balance sheet information is *positively* related to cost of capital for firms not consistently hosting open calls. However, results also suggest, consistent with my hypothesis, that the combination of disclosure of balance sheet information and hosting open calls is negatively associated with implied cost of capital estimates.[8]

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[7] In additional tests, I estimate cost of capital regressions using decile ranks for all variables (which controls for outliers and non-linearities) and using a one-factor model instead of a three-factor model. Inferences are the same as 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). Further, the coefficient for *Open4*BS_Ratio* is negative and significant at the .001 level for both alternative specifications.

[8] 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 insignificant for the Spread sample (t = -0.88). The coefficient is negative and significant at the .05 level for the cost of capital and PIN samples (t = -1.90 and t = -1.88, respectively).

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

Panel A: Descriptive Statistics, N=687 [a]

	Commit = 1	
	Number	Percent
Commit (BS)	42	6.1%
Commit (IS)	41	6.0%
Commit (SCF)	13	1.9%
Commit (Total)	44	6.4%

	Mean	Std. Dev.	Q1	Median	Q3
CofC	0.196	0.092	0.133	0.190	0.248
AQ	0.037	0.027	0.020	0.029	0.046
Beta	1.029	0.500	0.694	0.955	1.278
MVE	9,748.63	33,115.40	533.75	1,475.38	5,119.47
BTM	0.529	0.469	0.213	0.420	0.729

Panel B: Regression Analysis, Dependent Variable is CofC

	BS	IS	SCF	Total	BS	IS	SCF	Total
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*
Commit	-0.016	-0.001	0.036	-0.014	--	--	--	--
	-1.40	*-0.12*	*2.31*	*-1.24*	--	--	--	--
Open4	--	--	--	--	0.020	0.028	-0.010	0.009
	--	--	--	--	*0.94*	*0.29*	*-0.91*	*0.27*
FS_Ratio	--	--	--	--	0.022	0.024	0.038	0.050
	--	--	--	--	*2.41*	*0.95*	*2.27*	*2.81*
*Open4*FS_Ratio*	--	--	--	--	-0.047	-0.039	0.054	-0.034
	--	--	--	--	*-1.54*	*-0.34*	*1.37*	*-0.57*
AQ	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*
Beta	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*
lnMVE	-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*
lnBTM	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

Table 4 (continued)

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.

4.2.2 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 certain correlated omitted variable problems (if these firm-specific factors are stable over time). 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 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 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.[9] 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 the switch and the 30 trading days after the week of the switch.[10]

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 and after the switch to open calls. 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

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[9] Tests on a sample of NASDAQ firms yield similar results.

[10] 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.

partitions of the sample. 312 of the full sample of 822 switching firms have the required TAQ and Compustat press release 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 sample partitions depending on whether the following earnings call is also open (p-value = .00). In addition, the median decrease in spread is 0.0003 for a sample of 123 firms that host an open call in the following quarter and have *BS_Ratios* above the median (p-value = .00).[11] 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. 575 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.

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[11] 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.

Table 5, Panel A shows that both median raw PINs and median exchange-adjusted PINs decrease following the switch from closed to open calls. Statistical results in Panel B focus on exchange-adjusted PINs. Neither the mean nor the median decrease is significant for the full sample or for both partitions of the sample depending on whether the subsequent call is also open. The median decrease of 0.006 is significant for firms whose subsequent call is open and whose *BS_Ratios* are above the median, consistent with commitment (p-value = .05). This represents a decrease in PIN scores 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 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 Value Line's 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 the median raw cost of capital increases, 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 changes are 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 with higher than average *BS_Ratios*, but *decrease* such disclosure in the period after the switch.[12]

In summary, market-adjusted measures for all three measures decrease after the switch to open calls for some partitions of the sample. In addition, with the exception of cost of capital, median decreases are significant when firms remain open and *BS_Ratios*

[12] In my main time-series tests, I hold firm characteristics constant and test the firm-specific change in capital market outcomes. In additional unreported tests, I evaluate the mean change in market-adjusted outcomes while controlling for changes in firm characteristics. Results are similar to those reported.

are above the median. 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. Mean and median decreases in cost of capital are significant for the full sample and for a sample of firms that remain open. In addition, mean and median decreases in cost of capital are significant for firms that remain open and increase *BS_Ratios*.

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 calls are consistently closed and press release ratios are consistently low. Results are presented in Table 6. All tests are one-tailed. Contrary to expectations, median results are *negative* and significant for Spread and PIN at the .01 and .05 levels, respectively, and positive and insignificant for cost of capital. I investigate further and find that median results are *positive* and insignificant for Spread (p-value = 0.42) and positive and significant for PIN (p-value = 0.07) for a sample of firms whose subsequent call is closed and *BS_Ratio* is below the median. 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, although this result is not statistically significant.

Taken as a whole, the cross-sectional and time-series results are 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. However, results for bid-ask spread and PIN are mixed. In particular, the disclosure of balance sheet information is negatively related to bid-ask spread and PIN, regardless of firms' conference call behavior.

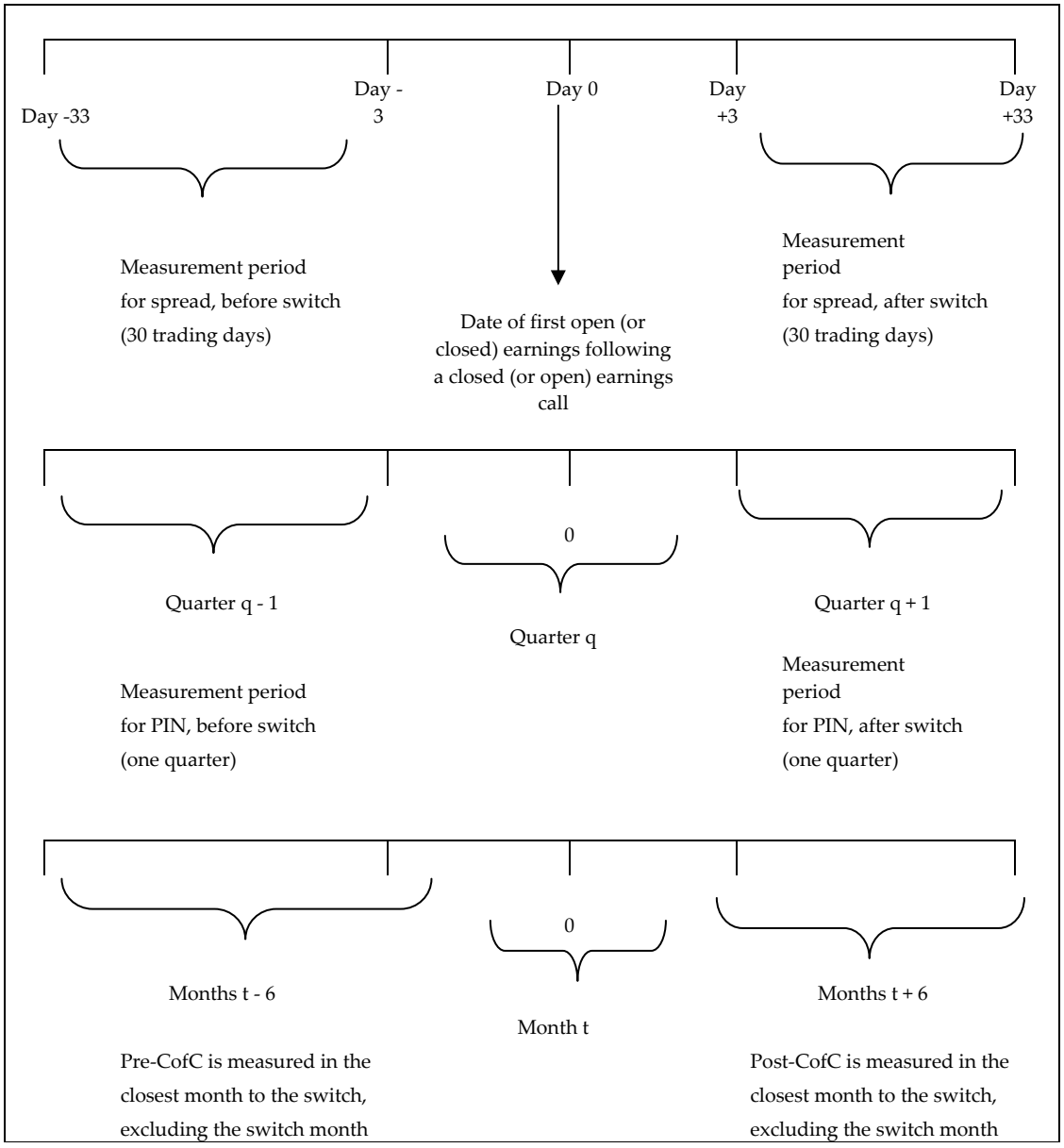

Figure 1: Timeline of Variable Measurement for Time-Series Tests (Pre-Reg FD)

Figure 1 shows the timeline of variable measurement for Pre-Reg FD time-series tests discussed in Section 4.2. 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.

Figure 1 (continued)

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

Panel A: Before & After Descriptive Statistics [a]

	Spread, N=312		*PIN, N=575*		*CofC, N=259*	
	Mean	Median	Mean	Median	Mean	Median
Before Switch, Raw	0.0086	0.0059	0.165	0.153	0.190	0.187
After Switch, Raw	0.0088	0.0059	0.166	0.149	0.190	0.189
Before Switch, Mkt-Adjusted	-0.0047	-0.0073	-0.046	-0.046	0.006	0.007
After Switch, Mkt-Adjusted	-0.0047	-0.0075	-0.045	-0.052	-0.006	-0.007

Panel B: Changes Analysis (Market-Adjusted)

	Δ*Spread*			Δ*PIN*			Δ*CofC*			
	Mean	Median		Mean	Median		Mean		Median	
Full Sample of Switches	-0.00001	-0.0003	***	0.001	-0.001		-0.012	**	-0.010	**
Subsequent Call Not Open	-0.0003	-0.0004	***	-0.003	-0.004		-0.004		-0.003	
Subsequent Call Open	0.0001	-0.0003	***	0.002	-0.001		-0.014	***	-0.012	***
Subsequent Call is Open **and** *BS_Ratio* > Median	0.0003	-0.0003	***	-0.003	-0.006	**	-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. ΔSpread = change in Spread from before to after the switch; ΔPIN = change in PIN from before to after the switch; ΔCofC = 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 to Closed Call (Pre-Reg FD)

Panel A: Before & After Descriptive Statistics [a]

	Spread, N=171		*PIN, N=322*		*CofC, N=137*	
	Mean	Median	Mean	Median	Mean	Median
Before Switch, Raw	0.0079	0.0060	0.164	0.153	0.185	0.176
After Switch, Raw	0.0079	0.0056	0.161	0.145	0.205	0.200
Before Switch, Mkt-Adjusted	-0.0054	-0.0071	-0.052	-0.054	0.000	-0.010
After Switch, Mkt-Adjusted	-0.0056	-0.0079	-0.058	-0.055	0.008	-0.001

Panel B: Changes Analysis (Market-Adjusted)

	Δ*Spread*			Δ*PIN*			Δ*CofC*	
	Mean	Median		Mean	Median		Mean	Median
Full Sample of Switch Events	-0.0002	-0.0003	***	-0.006 **	-0.005	**	0.007	0.002
Subsequent Call Not Closed	-0.0002	-0.0004	***	-0.006	-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** BS_Ratio < Median	0.0001	0.00001		0.006	0.010	*	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. ΔSpread = change in Spread from before to after the switch; ΔPIN = change in PIN from before to after the switch; ΔCofC = 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 two-tailed tests of significance (t-tests for differences in means and Wilcoxon signed-rank tests for medians).

5. Post-Reg FD Sample: Tests and Results

In this section, I discuss the post-Reg FD sample (chapter 5.1), tests of construct validity for measuring degrees of openness (chapter 5.2), and research design and empirical work (chapter 5.3).

5.1 Sample

For the period January 2003 to December 2004, I obtain measures of openness computed from conference call transcripts from Thomson's Street Events database, described in Mayew [2007].[1] 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 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 annual averages 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] I thank Bill Mayew for providing these measures.

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.[2] The mean (median) values of *QA_Min* and *%QA* are 28.86 minutes (28.31 minutes) and 56% (56%), respectively. Table 7 also shows a notable increase in the financial statement ratios. The mean (median) *BS_Ratio* is 68% (79%), compared to 43% (45%) in the pre-Reg FD period (Table 1). The mean (median) *IS_Ratio* is 87% (87%), compared to 82% (86%) in the pre-Reg FD period. The mean (median) *SCF_Ratio* is 24% (0%) compared to 4% (0%) 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,

[2] The mean of *Disc_QA* is not equal to 0 because I estimate the analyst demand equation, by calendar quarter, for the full sample of firms with data available for that quarter (without consideration of prior or subsequent quarters). To test my hypothesis (on an annual basis), I subsequently require at least three quarters of data on Thomson StreetEvents and Compustat Preliminary History / As First Reported.

respectively. The increase is consistent with results reported in D'Souza, et al. [2006] and potentially reflects a tendency 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 than the pre-Reg FD sample (which is based on the Compustat population) and more likely to include detailed financial statement information in earnings releases.

5.2 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 measure openness as *Disc_QA*, *QA_Min*, and *%QA*. I conduct two construct validity tests 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 of the level of detail in earnings releases, as was the case in the Pre-Reg FD period, although pre-Reg FD correlations are higher (e.g., Pearson and Spearman correlations between the *Num_Opens* and *BS_Ratio* are 0.169 for 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 more 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 higher (significant at the .05 and .01 levels, respectively) 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 *%QA* does not have construct validity while the evidence is mixed for *Disc_QA* and *QA_Min*. I therefore only use *Disc_QA* and *QA_Min* in my main analyses.

Table 7: Descriptive Data: Post-Reg FD

Panel A: Descriptive Statistics [a]

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

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

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

Table 7 (continued)

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

		Pre-Reg FD		
Firm Avgs / **Post-Reg FD**		No Open Calls (N=693)	>=1 Open Call (N=605)	
Disc_QA	Mean	0.926	2.211	
	Median	0.469	1.605	
QA_Min	Mean	28.421	29.763	**
	Median	28.105	29.594	+++
%QA	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.

5.3 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 (chapter 5.3.1) and time-series tests (chapter 5.3.2) of the relation between my measure of disclosure commitment and three capital market outcome measures: liquidity, information asymmetry, and cost of capital.

5.3.1 Cross-Sectional Tests

In this section, I discuss my research design and empirical tests for the post-Reg FD sample. (The research design for the post-Reg FD sample is the same as for the pre-Reg FD sample, discussed in Chapter 4.) 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 encompassing 2003 and 2004. Firms need not be present in both years although they must host at least three conference calls each year and have the required data to compute *Disc_QA*, *QA_Min*, and press release measures. Standard errors are clustered by firm, and year indicator variables are included in each regression.

5.3.1.1 Liquidity

I estimate the following regression to test the liquidity effects of commitment (control variables are defined in chapter 4):

$$Spread_{i,t} = \alpha_0 + \alpha_1 Commit_{i,t} + \alpha_2 \ln Size_{i,t} + \alpha_3 \ln Price_{i,t} + \alpha_4 \ln Volume_{i,t} + \alpha_5 \ln Volatility_{i,t} + Year2003_{i,t} + \varepsilon_{i,t}$$

t = 2003, 2004 (8)

All variables are calculated as averages for calendar years 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 (Bessembinder [2003]). In my analyses, the mean (standard deviation) for the pre-Reg FD bid-ask spread is 0.012 (0.014) while the mean (standard deviation) for the post-Reg FD bid-ask spread is 0.002 (0.003).

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

Panel A: Descriptive Statistics, N=1,284 [a]

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

	Mean	Std. Dev.	Q1	Median	Q3
Spread	0.002	0.003	0.001	0.001	0.002
lnSize	21.454	1.399	20.471	21.328	22.253
lnPrice	3.240	0.671	2.861	3.317	3.694
lnVolume	-5.159	0.602	-5.567	-5.158	-4.786
lnVolatility	-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*

	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	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*
Commit	-0.0001	0.0001	0.0002	0.0002	--	--	--	--
	-0.40	*0.56*	*0.81*	*0.71*	--	--	--	--
QA_Dum	--	--	--	--	0.0002	-0.0001	0.00001	-0.00004
	--	--	--	--	*0.79*	*-0.18*	*0.11*	*-0.15*
FS_Ratio	--	--	--	--	-0.0001	0.0000	-0.0003	-0.0005
	--	--	--	--	*-0.48*	*0.07*	*-2.04*	*-1.47*
*QA_Dum*FS_Ratio*	--	--	--	--	-0.0002	0.0003	0.0004	0.0003
	--	--	--	--	*-0.55*	*0.35*	*1.53*	*0.69*
lnSize	-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*
lnPrice	-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*
lnVolume	-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*
lnVolatility	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^2	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*, Commitment is Measured based on *Disc_QA*

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

5.3.1.2 Information Asymmetry

I estimate the following regression to test the information asymmetry effects of commitment (control variables are defined in chapter 4):

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

t = 2003, 2004 (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. 2,677 firm-years have the required data to compute PIN scores and control variables. Panel A reports that 25.1% to 26.5% of firms commit to increased disclosure based on the *BS_Ratio*, *IS_Ratio*, and *Total_Ratio*. 18.8% to 20.1% commit based on the *SCF_Ratio*. The mean (median) PIN score is 16.3% (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 .05 level (t = -1.88). The coefficient value reveals that committed firms' PIN scores are approximately .3 percentage points lower than PIN scores for firms that are not committed. Evaluated against the mean PIN of 16.3%, this represents a decrease in PIN of about 2%. 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 (t = -2.42). Results are insignificant for other financial statements. This result is consistent with results for the pre-Reg FD period.

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

Panel A: Descriptive Statistics, N=2,677 [a]

	QA_Min Commit = 1		*Disc_QA* Commit = 1	
	Number	Percent	Number	Percent
Commit (BS)	671	25.1%	694	25.9%
Commit (IS)	710	26.5%	709	26.5%
Commit (SCF)	537	20.1%	504	18.8%
Commit (Total)	699	26.1%	704	26.3%

	Mean	Std. Dev.	Q1	Median	Q3
PIN	0.163	0.065	0.112	0.153	0.208
MVE	3,276.35	10,552.61	325.72	808.54	2,347.60
Analyst	10.914	8.457	5.000	9.000	15.000
InstOwn	0.622	0.220	0.478	0.657	0.789
Dispersion	2.743	1.226	1.973	2.812	3.592

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

	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.357	0.357	0.357	0.357	0.363	0.345	0.356	0.359
	72.21	*71.98*	*71.75*	*72.15*	*61.49*	*23.93*	*71.01*	*61.24*
Commit	-0.003	0.001	-0.0001	-0.002	--	--	--	--
	-1.88	*0.77*	*-0.03*	*-0.95*	--	--	--	--
QA_Dum	--	--	--	--	-0.003	0.006	-0.001	-0.001
	--	--	--	--	*-0.79*	*0.42*	*-0.51*	*-0.35*
FS_Ratio	--	--	--	--	-0.010	0.013	0.0003	-0.006
	--	--	--	--	*-2.42*	*0.87*	*0.11*	*-1.09*
*QA_Dum*FS_Ratio*	--	--	--	--	0.003	-0.009	-0.001	0.0003
	--	--	--	--	*0.55*	*-0.50*	*-0.31*	*0.05*
lnMVE	-0.018	-0.018	-0.018	-0.018	-0.018	-0.018	-0.018	-0.018
	-22.83	*-22.85*	*-22.86*	*-22.84*	*-22.70*	*-22.52*	*-22.75*	*-22.70*
lnAnalyst	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020
	-12.23	*-12.58*	*-12.45*	*-12.32*	*-12.10*	*-12.14*	*-12.12*	*-12.10*
InstOwn	0.002	0.002	0.002	0.002	0.003	0.002	0.002	0.003
	0.52	*0.33*	*0.40*	*0.45*	*0.58*	*0.41*	*0.47*	*0.56*
Dispersion	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	2.32	*2.30*	*2.30*	*2.30*	*2.53*	*2.26*	*2.28*	*2.38*
R^2	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68

Table 9 (continued)

Panel C: Regression Analysis, Dependent Variable is *PIN*, Commitment is Measured based on *Disc_QA*

	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.357	0.357	0.357	0.357	0.364	0.350	0.357	0.361
	71.78	*71.99*	*72.11*	*71.93*	*64.34*	*24.77*	*72.15*	*63.95*
Commit	-0.002	0.001	-0.0002	-0.001	--	--	--	--
	-1.51	*0.68*	*-0.08*	*-0.81*	--	--	--	--
DiscQA_Dum	--	--	--	--	-0.003	-0.002	-0.002	-0.004
	--	--	--	--	*-0.90*	*-0.12*	*-1.19*	*-0.96*
FS_Ratio	--	--	--	--	-0.009	0.008	-0.001	-0.008
	--	--	--	--	*-2.53*	*0.56*	*-0.37*	*-1.51*
*DiscQA_Dum*FS_Ratio*	--	--	--	--	0.002	0.0002	0.002	0.004
	--	--	--	--	*0.50*	*0.01*	*0.40*	*0.58*
lnMVE	-0.018	-0.018	-0.018	-0.018	-0.018	-0.018	-0.018	-0.018
	-22.79	*-22.78*	*-22.83*	*-22.78*	*-22.76*	*-22.60*	*-22.80*	*-22.73*
lnAnalyst	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020	-0.020
	-12.49	*-12.59*	*-12.54*	*-12.51*	*-12.44*	*-12.51*	*-12.50*	*-12.47*
InstOwn	0.002	0.002	0.002	0.002	0.003	0.002	0.002	0.003
	0.50	*0.33*	*0.40*	*0.45*	*0.61*	*0.44*	*0.51*	*0.59*
Dispersion	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	2.36	*2.29*	*2.30*	*2.32*	*2.58*	*2.32*	*2.36*	*2.45*
R^2	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68

Sample description and variable definitions: The sample consists of 2,677 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 and exchange indicator variables are included but not reported.

5.3.1.3 Cost of Capital

I estimate the following regression to test the cost of capital effects of commitment (control variables are defined in chapter 4):

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

t = 2003, 2004 (10)

$Commit_t$ and $CofC_t$ are calculated as annual averages over quarterly measures 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.[3]

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 period vs. the pre-Reg FD period.[4] There are three 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

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[3] In additional tests, I estimate cost of capital regressions using decile ranks for all variables and using a one-factor model instead of a three-factor model. Inferences are the same as those reported for main effects, interaction effects, and *Commit*.

[4] In unreported tests, I define *Commit* in the post-Reg period in the same way as I define *Commit* in the pre-Reg FD period, and test for a reduced value to commitment statistically. Because are calls are open after Reg FD, firms with calls each quarter (as well as earnings release ratios greater than the median) are considered committed. Approximately 90% of firms in the post-Reg FD period host calls in each quarter and, for all three samples, the relation between *Commit* and outcome measures is weaker after Reg FD.

richness of the information environment, there may be less value to disclosure commitment post-Reg FD. Third, Bushee, Jung, and Miller [2007] document that non-earnings-announcement related conference presentations have become increasingly prevalent in the post-Reg FD period, and such presentations are associated with certain capital market outcomes. If the capital market outcomes that I examine are associated with these non-earnings-announcement related presentations, then they are potentially less likely to be associated with my measures of commitment, which is based on information in earnings announcements.

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

Panel A: Descriptive Statistics, N=1,192 [a]

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

	Mean	Std. Dev.	Q1	Median	Q3
CofC	0.142	0.071	0.091	0.133	0.180
Accruals Quality	0.039	0.027	0.021	0.032	0.049
Beta	1.164	0.883	0.532	0.922	1.601
MVE	7,127.71	24,298.79	711.54	1,603.35	4,498.88
BTM	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*

	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	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*
Commit	-0.011	-0.005	-0.003	-0.003	--	--	--	--
	-2.34	*-1.22*	*-0.61*	*-0.65*	--	--	--	--
QA_Dum	--	--	--	--	-0.011	0.042	-0.007	-0.014
	--	--	--	--	*-1.12*	*1.01*	*-1.29*	*-1.24*
FS_Ratio	--	--	--	--	-0.022	0.009	-0.003	-0.018
	--	--	--	--	*-1.98*	*0.25*	*-0.42*	*-1.21*
*QA_Dum*FS_Ratio*	--	--	--	--	0.010	-0.053	0.007	0.016
	--	--	--	--	*0.74*	*-1.13*	*0.70*	*0.89*
AQ	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*
Beta	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*
lnMVE	-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*
lnBTM	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*
R^2	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*, Commitment is Measured based on *Disc_QA*

	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	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*
Commit	-0.010	-0.006	-0.003	-0.003	--	--	--	--
	-1.97	*-1.34*	*-0.51*	*-0.65*	--	--	--	--
DiscQA_Dum	--	--	--	--	-0.010	0.036	-0.006	-0.012
	--	--	--	--	*-0.99*	*0.84*	*-1.11*	*1.00*
FS_Ratio	--	--	--	--	-0.021	0.005	-0.002	-0.015
	--	--	--	--	*-1.99*	*0.14*	*-0.23*	*-1.11*
*DiscQA_Dum*FS_Ratio*	--	--	--	--	0.008	-0.046	0.004	0.012
	--	--	--	--	*0.62*	*-0.96*	*0.42*	*0.66*
AQ	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*
Beta	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*
lnMVE	-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*
lnBTM	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.

5.3.2 Time-Series Tests

To supplement the cross-sectional results, I analyze 126 conference call initiation events in the post-Reg FD period. I require that the firm host no conference calls for three prior quarters and a single conference call in each of the following three quarters to qualify as an initiation event. The advantage of using initiations is that they represent a significant change in disclosure policy. The disadvantage is that initiations could be part of larger structural changes, with implications for the capital market outcomes I consider. Results from initiation tests are presented in Table 11. I first discuss spread results. 54 firms have required spread and press release data. Spread changes are negative and significant only when *QA_Min* is above the median (significant at the .05 level). 49 firms have required PIN and press release data. PIN results are contrary to expectations in that PIN increases for the full sample, although PIN decreases significantly for firms with *Disc_QA* and *QA_Min* above the median. In addition, PIN increases for *BS_Ratio* and *IS_Ratio* above median, contrary to expectations. Only 7 firms have the required cost of capital and press release data. The mean and median decrease is significant for the full sample. In summary, initiation results are mixed, although inferences are hindered by small sample sizes and the possibility of other uncontrolled structural changes.

Table 11: Time-Series Analysis: Conference Call Initiations, 2003-04

Panel A: Before & After Descriptive Statistics [a]

	RelSpread, N=54		*PIN, N=49*		*CofC, N=7*	
	Mean	Median	Mean	Median	Mean	Median
Before Initiation, Raw	0.008	0.005	0.203	0.198	0.142	0.139
After Initiation, Raw	0.009	0.005	0.211	0.182	0.114	0.114
Before Initiation, Mkt-Adjusted	-0.005	-0.003	-0.008	-0.014	0.008	0.005
After Initiation, Mkt-Adjusted	-0.005	-0.003	-0.002	-0.032	-0.014	-0.008

Panel B: Changes Analysis (Market-Adjusted)

	ΔSpread		*ΔPIN*		*ΔCofC*	
	Mean	Median	Mean	Median	Mean	Median
Full Sample	0.0003	-0.0001	0.006	0.004	-0.022 *	-0.020 **
Disc_QA Below the Median	0.0001	-0.0001	0.033 **	0.037 **	-0.019	-0.020
Disc_QA Above the Median	0.0004	-0.0002	-0.020 *	-0.039 *	-0.025	-0.019
QA_Min Below the Median	0.0009	0.0000	0.033 **	0.042 **	-0.019	-0.020
QA_Min Above the Median	-0.0003	-0.0004 **	-0.020 **	-0.027 *	-0.025	-0.019
BS_Ratio Below the Median	0.0005	0.0000	-0.004	-0.017	-0.019 **	-0.020
BS_Ratio Above the Median	0.0001	-0.0004	0.015	0.027	-0.025	-0.024
IS_Ratio Below the Median	0.0003	-0.0001	-0.006	-0.017	-0.035 *	-0.020
IS_Ratio Above the Median	0.0003	-0.0002	0.015	0.017	-0.013	-0.008

Table 11 (continued)

Sample description and variable definitions: The sample consists of firms that initiate earnings calls during 2003 - 2004. Disc_QA and QA_Min are defined in Table 7. BS_Ratio and IS_Ratio are defined in Table 1. RelSpread = the relative bid-ask spread for 30 days before or after the initiation; PIN = the quarterly PIN estimate either before or after the initiation; CofC = the quarterly Value Line cost of capital estimate either before or after the initiation. ΔSpread = change in Spread from before to after the initiation; ΔPIN = change in PIN from before to after the initiation; ΔCofC = change in CofC from before to after the initiation.

a - Panel A reports descriptive statistics of relative bid-ask spread, PIN, and Value Line cost of capital before and after the conference call initiation. 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 rank-sum tests for differences in median).

6. Further Discussion and Analysis

In this section I discuss the commitment to decreased disclosure (chapter 6.1), as well as results from tests controlling for self-selection (chapter 6.2), sporadic calls (chapter 6.3), and measuring "discretionary openness", pre-Reg FD (chapter 6.4). Finally, I discuss results using alternative measures for liquidity (chapter 6.5) and earnings release ratios (chapter 6.6).

6.1 Commitment to Decreased Disclosure

In order to triangulate results, a potentially useful extension to my research is the examination of the commitment to *decreased* disclosure. While the focus of my research is increased disclosure, I discuss this alternative view in this section. Three recent studies examine decreased disclosure. Verrecchia and Weber [2006] show that firms withholding disclosure experience deterioration in proxies for liquidity and information asymmetry. Chen, Rajgopal, and Matsumoto [2007] show that an increasing number of firms are discontinuing earnings guidance, and the authors attribute this decrease in disclosure to expectations of poorer performance. Finally, Brochet, Faurel, and McVay [2007] show that CEO turnover is associated with a shift in earnings guidance policy. I do not directly investigate the commitment to decreased disclosure for the following reasons (although I examine the capital market consequences for firms switching from open to closed calls in Chapter 4.2.2). First, my measure of commitment is based on

disclosures that are less susceptible to change than, for example, earnings guidance. For example, Chen, et al. [2002] show that firms tend to *continue* to include balance sheets in press releases after they start the practice, while Chen et al. [2006] and Faurel et al. [2007] show that firms tend to change earnings guidance policies as management and performance change. In addition, because economic theory predicts that all but the worst news firms disclose, decreases in disclosure are more likely than increases to be motivated by economic purposes (an external attribution) rather than policy purposes (an internal attribution). In other words, it is more likely that a decrease in disclosure is due to unusual economic circumstances. Second, I measure commitment using the covariation principle, which attributes the cause of behavior, not lack of behavior. For example, in order to determine distinctiveness, a behavior (e.g., a call) must exist. This requirement weakens the applicability of my commitment measure to disclosure decreases. Third, if commitment is caused by a stable, internal factor, as predicted by attribution theory, there will not be decrease in commitment. While I do not investigate the commitment to decreased disclosure, I acknowledge that this is a potentially fruitful area for future research.

6.2 Controls for Self-Selection

Because firms *choose* whether to commit, differences in liquidity, information asymmetry, or cost of capital could be attributable to unobservable firm characteristics that drive the commitment decision, 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:

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

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 *QA_Min* and *BS_Ratio* are both in the upper half of the distribution, and 0 otherwise.[5] I include variables shown by prior research (e.g., Lang and Lundholm [1993], Francis, Nanda, and Olsson [2008]) 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

[5] 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, exhibits greater cross-sectional variation and is a more powerful indicator of commitment.

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.[6] 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 2003 and 2004. The inverse Mills ratio is obtained from Equation (11) and included as an additional control variable in the treatment equation:

$$Y_i = \alpha_1 + \alpha_2 Commit_i + \alpha_3 Controls_i + \alpha_4 InvMills_i + \varepsilon_i \qquad (12)$$

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 variables known to be associated with the outcome variable and defined previously; and *InvMills* = the ratio of the standard normal p.d.f.'s and c.d.f.'s obtained from equation (11). A positive coefficient for *InvMills* indicates that self-selection is an issue for the sample. Results are presented in Table 12 for the pre-Reg FD sample. I first discuss results from estimating the selection equation, equation (11), in Panel A. Pseudo-R^2s range in

[6] I include *HiTech* because Bushee et al. [2004] show that firms in high technology industries are more likely to host open calls and Chen et al. [2002] show that firms in high technology industries are more likely to include balance sheets in press releases.

magnitude from 4% to 6%, indicating the difficulty in explaining firms' decision to commit. The coefficient for *HiTech* is significant and positive for the PIN and Cost of Capital samples (z = 2.36 and 2.05, respectively), while the coefficient for *Inst_Own* is significant and positive for the Spread sample (z = 2.28). Panel B reports results from estimating the treatment equation, equation (12), for the pre-Reg FD sample. The coefficient on *Commit* is negative for all three samples, and significant only for the Spread and PIN samples (t = -1.34 and -1.85, significant at the .10 and .05 levels, respectively). I interpret this as evidence that cost of capital 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. Results are presented in Table 12, Panel C. 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 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 at the .10 level for the cost of capital and PIN samples (t = -1.53 for both). I interpret this as evidence that the cost of

capital and PIN results are robust to controlling for endogeneity, subject to the validity of my assumption that industry membership is a key determinant of disclosure commitment.

For the post-Reg FD sample, my determinants variables behave differently with respect to the decision to commit (results are presented in Table 13, Panel A). In particular, the coefficient on *HiTech* is not significantly positive for any of the three samples. This is perhaps not surprising given the different definition of *Commit* after Reg FD. In terms of the effects of commitment on capital market outcomes (Table 13, Panel B), the coefficient on *Commit* is insignificant for the Spread and PIN samples (t = -0.27 and -0.45) and remains negative and significant for the Cost of Capital sample (t = -2.69, significant at the .001 level). I interpret this as evidence that the post-Reg FD Cost of Capital 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.

Table 12: Cross-Sectional Analysis with Controls for Self-Selection (Pre-Reg FD)

Panel A: Selection Model (Commit-BS)

Spread Sample	Inst_Own	lnMVE	lnBTM	Analysts	ROA	Issue	HiTech	Pseudo-R^2
Coefficient	0.810	0.049	-0.064	-0.071	0.803	-0.166	0.307	0.04
z-stat	*2.28*	*0.99*	*-0.60*	*-1.24*	*0.92*	*-0.59*	*1.49*	
N = 1,210								
PIN Sample								
Coefficient	0.345	0.007	-0.203	0.058	0.172	-0.009	0.241	0.06
z-stat	*1.57*	*0.21*	*-3.74*	*1.14*	*0.75*	*-0.07*	*2.36*	
N = 2,842								
CofC Sample								
Coefficient	-0.346	0.077	-0.026	0.079	0.822	-0.084	0.402	0.06
z-stat	*-0.74*	*1.26*	*-0.19*	*1.09*	*0.68*	*-0.26*	*2.05*	
N = 684								

Panel B: Treatment Effects

Spread Sample	Commit(BS)	lnMVE	lnPrice	lnVolume	lnVolatility	InvMills	R^2	N
Coefficient	-0.001	-0.001	-0.008	-0.004	0.012	0.0001	0.72	1,210
t-stat	*-1.34*	*-6.69*	*-11.94*	*-8.76*	*11.69*	*0.10*		
PIN Sample								
	Commit(BS)	lnMVE	Analyst	Inst_Own	Dispersion	InvMills		
Coefficient	-0.009	-0.027	-0.005	-0.007	0.001	0.059	0.59	2,842
t-stat	*-1.85*	*-32.84*	*-3.89*	*-1.27*	*1.17*	*10.15*		
CofC Sample								
	Commit(BS)	AQ	Beta	lnMVE	lnBTM	InvMills		
Coefficient	-0.014	0.323	0.003	-0.004	0.045	0.035	0.32	684
t-stat	*-1.19*	*2.35*	*0.41*	*-1.56*	*8.67*	*1.68*		

Table 12 (continued)

Panel C: High Technology Sample

Spread Sample

	Commit(BS)	lnMVE	lnPrice	lnVolume	lnVolatility	R^2	N
Coefficient	0.001	-0.001	-0.006	-0.004	0.010	0.71	107
t-stat	*0.72*	*-2.78*	*-5.49*	*-2.37*	*3.21*		

PIN Sample

	Commit(BS)	lnMVE	Analyst	Inst_Own	Dispersion		
Coefficient	-0.010	-0.024	-0.008	-0.018	-0.002	0.49	756
t-stat	*-1.53*	*-14.29*	*-2.54*	*-2.09*	*-0.90*		

CofC Sample

	Commit(BS)	AQ	Beta	lnMVE	lnBTM		
Coefficient	-0.029	0.402	0.027	0.004	0.060	0.27	118
t-stat	*-1.53*	*1.50*	*1.94*	*0.95*	*5.70*		

Sample description and variable definitions: the Spread Sample consists of 1,210 NYSE observations for the year 2000 with required data to compute spread, control variables, and determinants proxies; the PIN Sample consists of 2,842 observations for the year 2000 with required data for PIN, control variables, and determinants proxies; the CofC Sample consists of 684 observations for the year 2000 with required data for Value Line cost of capital, control variables, and determinants proxies. ROA = net income before extraordinary items divided by total assets; Issue = 1 if split-adjusted shares increased by more than 20% and 0 otherwise; and HiTech = 1 if firm is in a 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. See Table 1 for other variable definitions. All variables are computed for the fiscal year ended 1999, or the beginning of fiscal year 2000.

Panel A reports results from a probit model explaining firms' commitment to increased disclosure. Coefficient estimates and z-statistics are reported. Panel B reports results from regressions of either Spread, PIN, or CofC, on Commit and control variables, including InvMills, the inverse Mills ratio obtained from the probit model in Panel A. Coefficients and robust t-statistics are reported. Panel C reports results from regressions of Spread, PIN, or CofC, on Commit and control variables for restricted sample of firms in high technology industries. Coefficients and robust t-statistics are reported.

Table 13: Cross-Sectional Analysis with Controls for Self-Selection (Post-Reg FD)

Panel A: Selection Model (Commit-BS)

Spread Sample

	Inst_Own	lnMVE	lnBTM	Analysts	ROA	Issue	HiTech	Pseudo-R^2
Coefficient	0.639	-0.030	-0.151	0.318	0.029	-0.037	-0.205	0.03
z-stat	*2.89*	*-0.74*	*-2.40*	*4.24*	*0.05*	*-0.15*	*-1.57*	
N = 1,272								

PIN Sample

Coefficient	0.681	-0.007	-0.146	0.365	0.238	0.022	0.028	0.06
z-stat	*4.91*	*-0.28*	*-3.60*	*6.92*	*1.30*	*0.17*	*0.43*	
N = 2,674								

CofC Sample

Coefficient	0.845	-0.087	-0.119	0.572	0.354	0.066	0.039	0.06
z-stat	*3.23*	*-2.01*	*-1.73*	*6.13*	*0.86*	*0.25*	*0.39*	
N = 1,191								

Panel B: Treatment Effects

Spread Sample

	Commit(BS)	lnMVE	lnPrice	lnVolume	lnVolatility	InvMills	R^2	N
Coefficient	-0.00003	-0.001	-0.001	-0.001	0.003	0.001	0.41	1,272
t-stat	*-0.27*	*-13.18*	*-2.95*	*-6.03*	*5.14*	*2.30*		

PIN Sample

	Commit(BS)	lnMVE	Analyst	Inst_Own	Dispersion	InvMills		
Coefficient	-0.001	-0.029	-0.015	-0.021	0.003	-0.023	0.57	2,674
t-stat	*-0.45*	*-32.55*	*-5.88*	*-3.18*	*3.66*	*-3.04*		

CofC Sample

	Commit(BS)	AQ	Beta	lnMVE	lnBTM	InvMills		
Coefficient	-0.013	0.103	0.012	-0.001	0.019	-0.018	0.16	1,191
t-stat	*-2.69*	*1.07*	*3.23*	*-0.62*	*3.93*	*-2.04*		

Table 13 (continued)

Sample description and variable definitions: the Spread Sample consists of 1,272 firm-year observations for the years 2003 and 2004 with required data to compute spread, control variables, and determinants proxies; the PIN Sample consists of 2,674 firm-year observations for the years 2003 and 2004 with required data for PIN, control variables, and determinants proxies; the CofC Sample consists of 1,191 firm-year observations for the years 2003 and 2004 with required data for Value Line cost of capital, control variables, and determinants proxies. Commit = 1 if both QA_Min and BS_Ratio are greater than the sample median. ROA = net income before extraordinary items divided by total assets; Issue = 1 if split-adjusted shares increased by more than 20% and 0 otherwise; and HiTech = 1 if firm is in a 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. See Table 1 and Table 5 for other variable definitions.

Panel A reports results from a probit model explaining firms' commitment to increased disclosure. Coefficient estimates and z-statistics are reported. Panel B reports results from regressions of either Spread, PIN, or CofC, on Commit and control variables, including year dummies and InvMills, the inverse Mills ratio obtained from the probit model in Panel A. Coefficients and robust t-statistics, based on standard errors clustered by firm, are reported.

6.3 Pre-Reg FD Consensus: Sporadic Calls

In my main tests, I consider the pre-Reg FD sample period a low consensus period because fewer firms hosted conference calls in that 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 conference calls or no conference calls. Table 14, Panel A presents results. In the first three columns, I estimate the base regression models (equations (4), (5), and (6)) on this restricted sample of firms. By requiring that each firm host at least one call, I control for any substantial differences among firms that are not captured by control variables. This requirement also sheds light on the relative impacts of consistency and consensus. Consistent with main results, I show that the interaction between consistently hosting open calls and the disclosure of balance sheet information in earnings releases is significant and negative

for PIN and CofC at the .10 level (t = -1.57 and -1.34, respectively), but insignificant for Spread (t = -0.39). For the next three columns, I construct a new variable, *Call4*, which equals 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 for firms that consistently host open calls as compared to firms that sporadically host calls (either open or closed). 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 hosting calls, also host calls in every quarter or host no calls at all. In effect, I am allowing consensus to vary and thus testing for the effects of low consensus. Results show that the interaction of *Open4* and *BS_Ratio* is insignificant for spread and cost of capital (t = 0.44 and -1.09, respectively), and negative and significant for PIN (t = -1.36, significant at the .10 level). This result suggests that consistency is an important factor in assessing PIN effects, but perhaps consensus or distinctiveness is more important is assessing liquidity or cost of capital benefits.

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 Chapter 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. For purposes of my tests, I restrict the sample to firms that host an earnings call (either open or closed) consistently for four consecutive quarters.

Table 14, Panel B presents results. I first estimate the base regression (equations (4), (5), and (6)) on this restricted sample. The coefficient for *Open4*BS_Ratio* is significant for all three capital market outcomes (t = -1.28 for *Spread*, significant at the .10 level; t = -2.06 for *PIN*, significant at the .05 level; and t = -1.34 for *CofC*, significant at the .10 level). These results suggest that consistency over time has relatively less impact than comparison object consensus. I also 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 Tables 2 - 4, in which the baseline comparison includes firms that host no open calls or sporadic open calls. The coefficient on *Open4*BS_Ratio* reveals that, for the PIN sample, there is a significant interaction between *Open4* and *BS_Ratio* (t = -2.44). I interpret this as evidence that, in testing the PIN relationship, comparison object consensus is an important factor in assessing PIN effects. 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 measure of disclosure commitment.

Table 14: Cross-Sectional Analysis Isolating Sporadic Calls (Pre-Reg FD)

Panel A: Regressions for Firms Hosting At Least One Earnings Call						
	Spread	PIN	CofC	Spread	PIN	CofC
Intercept	0.081	0.375	0.278	0.081	0.376	0.278
	18.34	*68.22*	*13.78*	*18.57*	*68.82*	*13.06*
Call4	--	--	--	-0.002	-0.005	0.008
	--	--	--	*-3.58*	*-1.41*	*0.72*
Open4	0.0003	0.010	0.016	-0.001	0.008	0.020
	0.34	*1.30*	*0.72*	*-1.06*	*0.95*	*0.88*
BS_Ratio	-0.002	-0.015	0.017	-0.004	-0.017	0.013
	-3.53	*-4.43*	*1.69*	*-3.17*	*-3.62*	*0.79*
*Call4*BS_Ratio*	--	--	--	0.003	0.005	0.005
	--	--	--	*1.99*	*0.68*	*0.27*
*Open4*BS_Ratio*	-0.001	-0.018	-0.042	0.001	-0.016	-0.037
	-0.39	*-1.57*	*-1.34*	*0.44*	*-1.36*	*-1.09*
Controls Included?	Yes	Yes	Yes	Yes	Yes	Yes
N	1,030	2,219	581	1,030	2,219	581
R^2	0.72	0.56	0.32	0.72	0.56	0.32
Panel B: Regressions for Firms Hosting An Earnings Call in Each Quarter						
	Spread	PIN	CofC	Spread	PIN	CofC
Intercept	0.061	0.359	0.293	0.061	0.359	0.299
	16.09	*38.53*	*11.48*	*16.05*	*38.50*	*11.44*
Open4	0.001	0.015	0.013	0.001	0.015	0.007
	1.23	*1.91*	*0.56*	*1.00*	*1.85*	*0.31*
BS_Ratio	-0.001	-0.012	0.018	-0.001	-0.008	0.011
	-1.06	*-2.44*	*1.42*	*-0.93*	*-1.44*	*0.67*
*Open4*BS_Ratio*	-0.001	-0.025	-0.043	0.001	-0.029	-0.037
	-1.28	*-2.06*	*-1.34*	*-1.02*	*-2.44*	*-1.07*
SporadicOpen	--	--	--	-0.0003	-0.001	-0.013
	--	--	--	*-0.57*	*-0.16*	*-0.90*
*SporadicOpen*BS_Ratio*	--	--	--	0.001	-0.008	0.016
	--	--	--	*0.44*	*-0.89*	*0.64*
Controls Included?	Yes	Yes	Yes	Yes	Yes	Yes
N	624	1,144	388	624	1,144	388
R^2	0.72	0.51	0.29	0.72	0.51	0.29

Table 14 (continued)

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. Panel A reports 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 a sample of firms that host at least one call. Panel B reports 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 (in which at least one 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.

6.4 Discretionary Openness (Pre-Reg FD)

In Chapter 3.4, I estimate the discretionary portion of the question-and-answer section of conference calls. In this section, I estimate the discretionary portion of the decision to host open calls, pre-Reg FD. Conceptually, the decision to host an open earnings call is both more permanent and more controllable than the choice of Q&A length, although in Chapter 4.2.2, I document that a sizable sample of firms moves from closed to open calls, and vice versa. Therefore, I estimate the discretionary portion of openness, pre-Reg FD, by estimating the same regression model, by quarter, as that in Equation (3) for Q&A minutes.[7] I then average the residuals from these quarterly logit regressions to obtain one measure of discretionary openness, *Disc_Open*, for my pre-Reg FD sample period. I then re-define commitment based on this variable and re-estimate all cross-sectional regressions. Results are presented in Table 15. While I also report

[7] In unreported tests, I also model *Open4* (firms that host an open call each quarter) using firm-specific characteristics rather than time-specific characteristics. Results for interaction terms are mostly insignificant. I do not focus on these tests because many *Open4* determinants are already controlled for in outcome regression models (e.g., analyst following, institutional ownership, size, growth).

results for Commit, I focus discussion on the coefficient for the interaction term, *DiscOpen_Dum*FS_Ratio*, where *DiscOpen_Dum* = 1 if *DiscOpen* is greater than the sample median, and 0 otherwise. For Spread regressions (Panel A) the interaction terms for *IS_Ratio*, *SCF_Ratio*, and *Total_Ratio* are significant at the .05 level (t = -1.91, -2.34, and -2.01, respectively). These results are similar to the main results in Table 2. For PIN regressions (Panel B) the interaction terms for *BS_Ratio*, *IS_Ratio*, and *Total_Ratio* are significant at the .10 level (t = -1.53, -1.41, and -1.64, respectively). With the exception of the significant coefficient for the *Total_Ratio* interaction, these results are similar to the main results in Table 3. For Cost of Capital regressions (Panel C) the interaction term for *IS_Ratio* is significant at the .05 level (t = -2.14), in contrast to the main results in Table 4 where only the interaction term for *BS_Ratio* is significant and negative. Taken as a whole, these results suggest that controlling for the quarterly determinants of open calls yields significant liquidity and cost of capital results for firms that disclose a relatively greater amount of *income statement* items, while PIN results are significant for firms disclosing balance sheet information. Liquidity and cost of capital results are in contrast to my main results, which yield the most consistent results for the disclosure of *balance sheet* information. Interpretation of these results is dependent on the quality of the determinants model and the selection of determinant variables.

Table 15: Cross-Sectional Analysis: Discretionary Openness (Pre-Reg FD)

Panel A: Regression Analysis, Dependent Variable is *Spread* and Commitment is based on *Disc_Open*								
N=1,249	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.083	0.083	0.083	0.083	0.084	0.083	0.083	0.083
	19.53	*19.04*	*19.17*	*19.47*	*19.01*	*18.10*	*18.86*	*18.57*
Commit	-0.001	-0.001	-0.002	-0.001	--	--	--	--
	-1.07	*-2.27*	*-3.47*	*-0.97*	--	--	--	--
DiscOpen_Dum	--	--	--	--	0.0003	0.005	0.0002	0.002
	--	--	--	--	*0.46*	*1.85*	*0.46*	*1.77*
FS_Ratio	--	--	--	--	-0.001	0.0004	0.002	-0.001
	--	--	--	--	*-1.09*	*0.19*	*0.80*	*-0.31*
*DiscOpen_Dum*FS_Ratio*	--	--	--	--	-0.001	-0.007	-0.006	-0.005
	--	--	--	--	*-0.93*	*-1.91*	*-2.34*	*-2.01*
lnSize	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	-7.15	*-7.20*	*-7.20*	*-7.14*	*-7.22*	*-7.11*	*-7.19*	*-7.13*
lnPrice	-0.008	-0.008	-0.008	-0.008	-0.008	-0.008	-0.008	-0.008
	-12.56	*-12.63*	*-12.59*	*-12.59*	*-12.62*	*-12.67*	*-12.70*	*-12.65*
lnVolume	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
	-9.46	*-9.43*	*-9.41*	*-9.47*	*-9.18*	*-9.29*	*-9.29*	*-9.21*
lnVolatility	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
	11.96	*11.82*	*11.75*	*11.95*	*11.70*	*11.68*	*11.64*	*11.71*
R^2	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Panel B: Regression Analysis, Dependent Variable is *PIN* and Commitment is based on *Disc_Open*								
N=3,019	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.389	0.388	0.388	0.389	0.391	0.399	0.386	0.393
	95.69	*94.35*	*97.32*	*95.72*	*88.43*	*40.72*	*91.93*	*74.12*
Commit	-0.004	-0.001	0.012	-0.005	--	--	--	--
	-1.50	*-0.23*	*2.69*	*-1.79*	--	--	--	--
DiscOpen_Dum	--	--	--	--	0.010	0.028	0.005	0.015
	--	--	--	--	*2.84*	*1.71*	*2.12*	*2.42*
FS_Ratio	--	--	--	--	-0.015	-0.017	0.026	-0.021
	--	--	--	--	*-4.04*	*-1.54*	*2.45*	*-2.34*
*DiscOpen_Dum*FS_Ratio*	--	--	--	--	-0.010	-0.028	-0.009	-0.023
	--	--	--	--	*-1.53*	*-1.41*	*-0.70*	*-1.64*
lnMVE	-0.031	-0.031	-0.031	-0.031	-0.030	-0.031	-0.031	-0.030
	-37.30	*-36.85*	*-37.17*	*-37.30*	*-36.73*	*-36.56*	*-36.50*	*-36.65*
lnAnalyst	-0.009	-0.009	-0.010	-0.009	-0.010	-0.010	-0.010	-0.010
	-6.71	*-6.85*	*-7.02*	*-6.66*	*-7.23*	*-7.28*	*-7.45*	*-7.16*
InstOwn	-0.006	-0.006	-0.006	-0.006	-0.006	-0.006	-0.007	-0.006
	-1.21	*-1.21*	*-1.23*	*-1.23*	*-1.21*	*-1.09*	*-1.27*	*-1.11*
Dispersion	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001
	0.55	*0.53*	*0.53*	*0.55*	*0.82*	*0.67*	*0.64*	*0.71*
R^2	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58

Table 15 (continued)

Panel C: Regression Analysis, Dependent Variable is *CofC* and Commitment is based on *Disc_Open*

N=687	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.285	0.286	0.282	0.284	0.279	0.236	0.285	0.267
	17.05	*17.16*	*16.87*	*16.94*	*15.41*	*7.61*	*17.00*	*13.40*
Commit	-0.003	-0.009	0.017	0.002	--	--	--	--
	-0.38	*-1.37*	*2.01*	*0.33*	--	--	--	--
DiscOpen_Dum	--	--	--	--	-0.008	0.081	-0.010	-0.007
	--	--	--	--	*-0.80*	*1.93*	*-1.50*	*-0.49*
FS_Ratio	--	--	--	--	0.019	0.064	0.036	0.050
	--	--	--	--	*1.71*	*2.01*	*1.48*	*2.14*
*DiscOpen_Dum*FS_Ratio*	--	--	--	--	-0.002	-0.108	0.019	-0.004
	--	--	--	--	*-0.10*	*-2.14*	*0.61*	*-0.12*
AQ	0.306	0.300	0.309	0.305	0.291	0.280	0.305	0.291
	2.26	*2.23*	*2.29*	*2.27*	*2.18*	*2.07*	*2.28*	*2.20*
Beta	0.001	0.002	0.001	0.001	0.001	0.002	0.003	0.001
	0.18	*0.29*	*0.15*	*0.11*	*0.10*	*0.25*	*0.39*	*0.11*
lnMVE	-0.007	-0.007	-0.007	-0.007	-0.007	-0.007	-0.008	-0.007
	-3.19	*-3.24*	*-3.15*	*-3.15*	*-3.08*	*-3.22*	*-3.43*	*-3.17*
lnBTM	0.048	0.048	0.048	0.049	0.049	0.048	0.047	0.048
	9.66	*9.59*	*9.46*	*9.64*	*9.75*	*9.64*	*9.45*	*9.70*
R^2	0.31	0.31	0.31	0.31	0.32	0.32	0.32	0.32

Sample description and variable definitions: The sample in Panel A consists of 1,249 NYSE firms with required data to compute Disc_Open, Spread, and control variables for October 1, 1999 to September 30, 2000. Disc_Open equals the average annual residuals from regressing Open on proxies for analyst demand. The sample in Panel B consists of 3,019 firms with required data to compute Disc_Open, PIN, and control variables. Exchange indicator variables are included but not reported. The sample in Panel C consists of 687 firms with required data to compute Disc_Open, CofC, and control variables. See Tables 1 - 4 for other variable definitions. Coefficients from OLS regressions and robust t-statistics are reported.

6.5 Additional Liquidity Tests

My main liquidity tests are restricted to NYSE firms. In sensitivity tests, I also estimate regressions for NASDAQ firms, with results presented in Table 16. Panel A reports results for the pre-Reg FD sample. In contrast to the NYSE results in Table 2,

Commit is significant and negative only when measured using the statement of cash flows (t= -1.44, significant at the .10 level). In addition, the interaction between *Open4* and *SCF_Ratio* is significant at the .05 level (t = -1.69). These results based on the statement of cash flows should be interpreted with caution because only 11 firms include any cash flow statement information. Panel B reports results for the post-Reg FD sample. Consistent with post-Reg FD NYSE results reported in Table 8, *Commit* and all interactions are insignificant. Because the decimalization of the stock exchanges cause the bid-ask spread to be a less salient proxy for liquidity, I also use Amihud's [2002] illiquidity measure, calculated as the absolute value of daily returns divided by dollar trading volume, averaged over 2003 and 2004. Unreported results using this measure, in raw and logged form, are insignificant across all financial statement measures. Taken as a whole, these supplemental results support main results suggesting that the relation between disclosure commitment and liquidity is weaker after Reg FD, consistent with a reduction in the value of committing.

Table 16: Cross-Sectional Analysis: Bid-Ask Spread (NASDAQ Firms)

Panel A: NASDAQ Firms, Pre-Reg FD								
	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.159	0.159	0.159	0.159	0.160	0.164	0.159	0.161
	22.48	*22.29*	*22.23*	*22.51*	*22.63*	*23.08*	*22.43*	*22.71*
Commit	0.001	0.00003	-0.003	0.001	--	--	--	--
	0.70	*0.03*	*-1.44*	*0.93*	--	--	--	--
Open4	--	--	--	--	-0.003	-0.009	0.001	-0.004
	--	--	--	--	*-1.59*	*-1.21*	*0.83*	*-1.37*
FS_Ratio	--	--	--	--	-0.002	-0.008	0.001	-0.006
	--	--	--	--	*-3.21*	*-3.16*	*0.33*	*-3.05*
*Open4*FS_Ratio*	--	--	--	--	0.006	0.011	-0.008	0.009
	--	--	--	--	*2.04*	*1.27*	*-1.69*	*1.65*
lnSize	-0.006	-0.006	-0.006	-0.006	-0.006	-0.006	-0.006	-0.006
	-15.10	*-14.89*	*-14.85*	*-15.14*	*-15.04*	*-14.79*	*-15.07*	*-14.92*
lnPrice	0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	-3.82	*-3.83*	*-3.84*	*-3.81*	*-3.87*	*-4.05*	*-3.80*	*-3.91*
lnVolume	0.012	-0.012	-0.012	-0.012	-0.012	-0.012	-0.012	-0.012
	-26.13	*-26.14*	*-26.15*	*-26.14*	*-25.60*	*-25.80*	*-26.24*	*-25.42*
lnVolatility	0.028	0.028	0.028	0.028	0.029	0.028	0.028	0.028
	26.44	*26.46*	*26.47*	*26.44*	*26.44*	*26.42*	*26.32*	*26.48*
R^2	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Panel B: NASDAQ Firms, Post-Reg FD								
	BS	IS	SCF	Total	BS	IS	SCF	Total
Intercept	0.049	0.050	0.050	0.049	0.049	0.048	0.050	0.050
	14.00	*13.99*	*13.85*	*13.95*	*13.81*	*11.01*	*13.94*	*13.80*
Commit	-0.0003	-0.00003	0.0001	-0.0001	--	--	--	--
	-1.18	*-0.12*	*0.30*	*-0.49*	--	--	--	--
QA_Dum	--	--	--	--	-0.001	-0.0004	-0.0004	-0.001
	--	--	--	--	*-0.97*	*-0.16*	*-1.67*	*-1.28*
FS_Ratio	--	--	--	--	-0.0002	0.002	0.000005	-0.0002
	--	--	--	--	*-0.40*	*0.73*	*0.01*	*-0.16*
*QA_Dum*FS_Ratio*	--	--	--	--	0.0003	0.0001	0.0004	0.001
	--	--	--	--	*0.42*	*0.03*	*0.61*	*0.80*
lnSize	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	-10.77	*-10.86*	*-10.76*	*-10.78*	*-10.65*	*-10.53*	*-10.67*	*-10.69*
lnPrice	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	-3.37	*-3.39*	*-3.38*	*-3.39*	*-3.40*	*-3.37*	*-3.33*	*-3.37*
lnVolume	-0.005	-0.005	-0.005	-0.005	-0.005	-0.005	-0.005	-0.005
	-15.63	*-15.59*	*-15.69*	*-15.62*	*-15.05*	*-15.11*	*-15.04*	*-15.02*
lnVolatility	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
	10.48	*10.39*	*10.42*	*10.42*	*10.24*	*10.36*	*10.18*	*10.15*
R^2	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71

Table 16 (continued)

Sample description and variable definitions: The sample in Panel A consists of 2,013 NASDAQ firms with required data to compute Spread and control variables for October 1, 1999 to September 30, 2000. The sample in Panel B consists of 1,552 NASDAQ firms with required data to compute Spread and control variables for 2003 and 2004. Year dummies are included for Panel B regressions but not reported. See Table 2 for other variable definitions. Coefficients from OLS regressions and robust t-statistics (using standard errors clustered by firm for Panel B) are reported.

6.6 Alternative Separation of High and Low Earnings Release Ratios

In my primary cross-sectional tests, I draw inferences based on *Commit* as well as interactions between openness and financial statement ratios. *Commit* is based, in part, on the sample median of financial statement ratios. To evaluate the sensitivity of results, I construct two alternative definitions of *Commit*. First, I re-define Commit as equal to 1 if *Open4* = 1 and financial statement ratios are greater than the *industry* median, where industry definitions follow those in Barth, Beaver, Hand, and Landsman [2005]. All results (not reported) are similar to those reported in Chapter 4, Tables 2 – 4, and Chapter 5, Tables 8 - 10, except that PIN results are insignificant *after* Reg FD. Second, I split the data using k-means cluster analysis (MacQueen [1967]; Bushee, Carter, and Gerakos [2007]). This procedure allows for two uneven clusters and is most appropriate for a sample with a lot of mass close to the median. All results (not reported) are similar to those reported, except that Cost of Capital results are insignificant before and after Reg FD. Sensitivity of results to the definition of *Commit* highlights the importance of

drawing inferences based on interaction terms, which are not sensitive to median splits, rather than *Commit*.

I draw four conclusions based on results from further analyses. First, results are mixed when controlling for the decision to commit using the Heckman two-step procedure, estimating regressions for only high-technology industries, or estimating regressions using the residual from a model of the determinants of open calls. Second, in the pre-Reg FD period, PIN results are more robust than either Spread or Cost of Capital results. Third, liquidity results are insignificant in the post-Reg FD sample period, consistent with my prediction that there is less value to disclosure commitment after this regulation. Fourth, results based on *Commit* are sensitive to defining the separation of high and low earnings release ratios.

7. 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; 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; further analysis reveals that the disclosure of balance sheet information is related to 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.

Appendix 1: Summary of Measures of Disclosure and Consequences

	Measure of:			
Paper	*Disclosure*	*Commitment?*	*Consequences*	*Additional Aspects*
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 2: Selection of Financial Statement Line Items for Computation of BS_Ratio, IS_Ratio, 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.

	Compustat Preliminary History / AFR Data Item #	Variable Name
Balance Sheet Items		
	Q36	Cash and Short-Term Investments
	Q37	Receivables – Total (MM$)
	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)
Income Statement Items		
	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
Cash Flow		
Statement Items	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)

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Biography

Mark E. Evans was born in Danville, Virginia, on December 30, 1973. He received his Bachelor of Business Administration and Master of Business Administration degrees from Radford University in 1995 and 1997, respectively. He became a Certified Public Accountant in the Commonwealth of Virginia in 1996, received the Outstanding MBA Student award in 1997, and received the Deloitte Fellowship in 2006. He was admitted to the Ph.D. program in Business Administration (Accounting) at the Fuqua School of Business, Duke University, in 2003. Before joining the PhD program, Mark worked for five years as an auditor with KPMG LLP and Walker Healthcare Services Group. Mark is married to Amelia; they have two children, Lydia and Nathan.