

## THE MARKET RESPONSE TO THE STANDARD & POORS TRANSPARENCY & DISCLOSURE RANKINGS

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### Abstract

This paper investigates whether the Standard & Poors (S&P) transparency and disclosure (T&D) rankings represented new information to the financial markets when the results of the study were released by S&P on October 15, 2002. The S&P T&D rankings report the relative levels of three disclosure dimensions (ownership structure and investor rights, financial transparency and information disclosure, and board and management structure and process) provided by firms in their annual reports (annual report rankings) and complete regulatory filings (composite rankings). The results suggest that the S&P T&D rankings provided new information to the markets on cross-sectional differences in disclosure, and the market responds unfavorably during the event period to firms with large difference in disclosure levels across annual report and other regulatory filings. Further analyses reveal that the results are driven by the subcategory of ownership structure and investor rights.

**Keywords:** corporate governance, disclosure, market reaction, annual report, regulatory report

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### 1. Introduction and Synopsis

This paper examines whether the financial market responded to the October 15, 2002 release of the rankings reported in the Standard and Poors (S&P) Transparency & Disclosure (T&D) Study of the S&P 500 firms. The period from 2001 to 2003 was characterized by intense interest in corporate governance issues. The Enron and WorldCom accounting scandals were sensational not only to the business community but also to the public at large (see, e.g., Ip and Schroeder 2002), and the continuous coverage led to calls for new legislation to establish new standards for corporate behavior and corporate governance and to impose penalties on offending firms and managers (Jain and Rezaee 2006). Given the importance of corporate governance issues at the time, S&P chose to release publicly the rankings of corporate-governance related disclosures [*ownership structure and investor rights (OW)*, *financial transparency and information disclosure (FT)*, and *board and management structure and process (BS)*] for the S&P 500 firms. We conjecture that these rankings represented new information that differed from the market's assessment of the adequacy of firms' disclosure practices and that the market reacted to these rankings in a systematic fashion.

Two characteristics suggest that the T&D study's release could have triggered market responses. First, the study was conducted under the auspices of Standard & Poors, a highly respected financial services firm, and represented the first post-Enron, objective, publicly available assessment of the S&P 500 firms' disclosure practices as they related to corporate governance. Given the release date, the study's findings were thus very timely. Second, S&P's assessment of disclosure practices included not only rankings of conventional financial disclosures (something other studies had previously examined; see, e.g., Botosan 1997), but it also reported rankings of nonfinancial disclosures (i.e., *OW* and *BS* rankings), with emphasis on disclosures that S&P deemed relevant in evaluating governance practices. Just as interestingly, the S&P study reported much lower rankings for these nonfinancial subcategories and suggested that nonfinancial disclosure practice needed improvement. These two characteristics have implications for the nature of the market's response to the study's release. The timeliness of the release suggests that the market would likely respond to the announcement, but it does not necessarily imply that the report would be informative. However, the novelty of the study's focus on nonfinancial corporate governance-related disclosures, combined with S&P's

call for improvements in these disclosures, enhanced the study's potential to revise analysts' and investors' assessments about the nature of firms' disclosure and corporate governance practices.

S&P released their study results as a way to highlight their own fee-for-service corporate governance scoring system (Patel and Dallas 2002). The published results of the S&P T&D study report three components of information that we use to assess the potential of the rankings to inform market participants. First, the study provides rankings of the relative quantity of the disclosures contained in a given S&P 500 firm's annual report (annual report rankings).<sup>1</sup> Second, similar rankings are reported of disclosures contained in firm's required regulatory filings, which consist of 10-Ks and annual proxy statements (composite rankings). The difference between the two sets of rankings thus represents the difference in disclosure level between the two disclosure vehicles (differential rankings). Third, Patel and Dallas (the study's authors) developed the rankings structured around three dimensions of disclosure that S&P asserts are relevant in assessing firms' corporate governance mechanisms: *financial transparency and information disclosure (FT)*, *ownership structure and investors rights (OW)* and *board and management structure and process (BS)*. Since these three dimensions are deemed by S&P to be useful in evaluating governance mechanisms, our research empirically examines the information content of (1) the levels of the disclosure rankings, (2) the differences in disclosure rankings between annual reports and required regulatory filings, and (3) the levels and differences in the rankings for the three disclosure subcategories.

We examine risk-adjusted abnormal returns in order to shed light on the information content of ranking levels and differences between composite rankings and annual report rankings for the three disclosure dimensions. Specifically, for the U. S. firms included in S&P's study, we measure firms' risk-adjusted abnormal returns over the four-day window surrounding the October 15, 2002 release date of the T&D rankings. We regress these measures on cross-sectional models that include both the

disclosure rankings and the difference in annual report and composite rankings (differential rankings) for the overall and the three dimensions of disclosure. We predict that higher disclosure rankings and lower differential rankings will be associated with more positive risk-adjusted returns.

We find that greater differential rankings are associated with more negative abnormal returns. Further investigation reveals that this association is driven primarily by the subcategory rankings of ownership structure and shareholder rights. This result is robust after controlling for the earnings announcements made during the event period. We conclude that the T&D rankings directed investors' attention to differences in firms' disclosure practices between annual reports and required regulatory filings. The negative reaction suggests that investors penalize firms that engage in this selective disclosure strategy. On the other hand, we generally fail to find an association between the composite rankings and the abnormal returns. This indicates that the market was aware of firms' disclosure levels in these composite filings.

The rest of our study is organized in the following manner. The next section briefly discusses the Patel and Dallas (2002) study, summarizes the relevant literature on disclosure quality and develops our research predictions. Section 3 describes the sample and variable measurements in our paper. Section 4 presents our main results and provides details on our sensitivity tests. Finally, Section 5 presents our concluding remarks.

## 2. The S&P T&D Study, Disclosure Quantity and Research Hypotheses

### 2.1 The S&P T&D Study

Standard & Poors developed their study of disclosure as part of an initiative to provide corporate governance information and analytical services to market participants; the study's methodology was developed from S&P's previous work in the area of corporate governance scoring (Patel and Dallas 2002). The study involved measurement/assessment of 98 disclosure attributes that are divided into three basic subcategories: ownership structure and investor rights (28 attributes), financial transparency and information disclosure (35 attributes), and board and management structure and process (35 attributes). Appendix 3 of the S&P T&D study provides a listing of each attribute under each category and subcategory (Patel and Dallas 2002); these are reproduced in our Appendix. These three subcategories represent domains of disclosure that S&P routinely assesses as part of their own corporate governance scoring process (Patel and Dallas 2002). The measurement/assessment was limited to determining if a particular attribute was present or not; the study's

<sup>1</sup> S&P cautioned readers that sole reliance on their disclosure rankings was insufficient to properly evaluate firms' governance practices, since the rankings reflect disclosure quantity and do not directly measure disclosure quality. However, past studies have suggested that the disclosure quantity and quality are highly correlated (see, e.g., Durnev and Kim 2005, Botosan 1997, Botosan, Plumlee and Xie 2004). Our evidence on market responses to the S&P disclosure scores is not premised on the notion that higher scores indicate higher disclosure quality. We instead suggest that S&P objectivity as sponsor of the study enhanced the credibility of the rankings, and thus the rankings were uniquely positioned to influence investor assessments of disclosure quality.

authors specifically ruled out any attempts to assess the quality of the disclosed information.<sup>2</sup>

The published rankings reflect decile ordering for the cross-section of S&P 500 firms, with the overall rankings reflecting the ratio of the number of attributes present to the total number of attributes. Higher ranks therefore reflect the fact that a greater quantity of attributes is present in the disclosure vehicle. Note that the presence or absence of the disclosure attributes was measured for (1) the annual report to the shareholders and (2) the required 10-K and proxy statement regulatory filings. As a result, both *annual report rankings* and *composite rankings* are presented by Patel and Dallas. “Final rankings” reflect an aggregate ranking for all 98 attributes, while “sub-rankings” are reported for each of the three disclosure subcategories. Since the annual report is typically a subset or part of the information provided in the required regulatory filings, then, by construction, the composite ranking should be greater than or equal to the annual report ranking.

Interestingly, Patel and Dallas (2002, p. 3) document a “notable difference between the T&D rankings based on annual reports alone and [the] T&D rankings on a composite basis.” Specifically, they find that composite ranking levels were consistently high, while annual report rankings were much more variable. Note that various researchers have concluded that the annual report is the “major reporting document” for analysts (Knutson 1992, 7) and is “one of the most important sources of corporate information” (Botosan 1997, 331). But the observed differences between composite rankings and annual report rankings could imply that a degree of information asymmetry exists between investors, who may focus on the annual report for information disclosures, and managers, who may provide relatively greater information disclosures in the required regulatory filings rather than the annual report (Patel and Dallas 2002; Ely and Stanny 1999). The degree to which observed differences in disclosure between the two vehicles affect shareholder wealth could therefore inform standard setters and regulators of any potential need to improve the consistency of disclosure, and may provide guidance to the firm in setting its optimal disclosure policy.

## 2.2 The Capital Market Effects of Disclosure Rankings

Lowenstein (1996; p. 1335-6) argues that “good disclosure has been a most efficient and effective mechanism for inducing managers to manage better.”

The literature on the effects of corporate disclosure tells a fairly consistent story (see Healy and Palepu 2001 for a comprehensive review of this literature; see Core 2001 for a discussion of this review). Recent research suggests a positive association between increased disclosure and positive capital market effects (e.g., Botosan 1997). Specifically, firms’ increased disclosures reduce the information asymmetry between managers and investors and thus reduce firms’ cost of equity capital (see, for example, Diamond and Verrecchia 1991, Kim and Verrecchia 1994, Botosan 1997). Regarding the S&P T&D rankings specifically, Cheng, Collins and Huang (2006) document that higher financial transparency and information disclosure rankings are associated with lower costs of equity capital, especially when high disclosure occurs in strong shareholder rights environments. However, it is unclear from their study whether the actual release of the rankings was regarded as an “information event” in the sense that the information informed the markets, and that investors were able to interpret and impound the rankings quickly in share prices.

Our study focuses on both the level of the disclosure rankings and the differences between composite rankings and annual report rankings at both the overall and subcategory levels. Interpretation of the level of disclosure ranking seems straight-forward; everything else being equal, a higher (lower) rank implies a higher (lower) level of disclosure, regardless of disclosure vehicle. Release of the composite rankings may or may not reflect new information to the markets. If investors are already aware of the relative disclosure levels, then any reaction would likely be small. However, given the climate of investor suspicion and distrust of managers’ communications with the investing public during the release period, investors may react to lower composite ranking levels by bidding shares down (i.e., a negative reaction).

On the other hand, there is relatively little research focusing on disclosure differences between these two disclosure vehicles, although the Patel and Dallas study clearly documents evidence of these differences. Clearly, the annual report is generally considered to be part of the annual 10-K filings, while annual proxy statements are filed in advance of meetings of shareholders. There is some research that the 10-K filings have incremental information when filing format is considered (Qi, Wu and Haw 2000), but there is relatively little research examining the information content of 10-K/proxy statements over the annual report to shareholders. Ely and Stanny (1999) find that firms with lower analyst following are more likely to be less specific in their environmental disclosures in their annual reports than in their 10-Ks and are penalized less for their environmental disclosures than those whose disclosures are consistent. This suggests that

<sup>2</sup> Botosan (1997) adopted a similar approach to developing her DSCORE proxy for disclosure level. The implication of this measurement approach is that disclosure quantity proxies for the relative quality of information disclosed in the given disclosure vehicle.

information asymmetry may exist between annual report users and 10-K users, and managers could take advantage of this information asymmetry by adopting a differential disclosure strategy in annual reports and 10-Ks/proxy statements. In other words, instead of presenting relevant information in the annual report, managers may intentionally choose to disclose this information deep in the body of the 10-K/proxy statements. To the extent that information gathering is costly for investors, such a strategy could give rise to information asymmetry and impose additional costs on investors.<sup>3</sup> Again, given the climate of investor suspicion and distrust of managers' communications with the investing public prevalent during the event period, this suggests that larger differences between annual report rankings and composite rankings will be unfavorably viewed by the markets.

Given that our research focus is on the capital market/shareholder wealth effects, we focus on the risk-adjusted abnormal returns during our event period for the 459 firms in our sample and the associations between returns and the various composite and differential disclosure rankings. Our above discussion leads us to expect that high disclosure ranking levels will be viewed favorably by the market while large differences between composite rankings and annual report rankings will be viewed negatively. By extension, we predict a positive (negative) association between disclosure rankings (differential rankings) and risk-adjusted abnormal returns.

### 3. Sample and Variable Measurement

#### 3.1 Sample and Descriptive Statistics on T&D Rankings

Our sample in this study consists of 459 firms that were ranked in the S&P T&D ranking study. Patel and Dallas reported in their Appendix 4 the ranks for a total of 460 firms out of the S&P 500 firms.<sup>4</sup> We excluded one of these firms from our study due to missing data; this left a total of 459 firms for our analyses. Summary statistics on the ranks for these 459 firms are reported in Panel A of our Table 1.

#### Insert Table 1 here

<sup>3</sup> Patel and Dallas (2002) note that the Conference Board's Commission on Public Trust and Private Information suggests that corporate disclosures should be more user-friendly. They also quote President George W. Bush's challenge to businesses to disclose details on CEO compensation in their annual reports.

<sup>4</sup> Patel and Dallas examined the companies that were members of the S&P 500 index both on June 30, 2002 and on September 30, 2002. Their study excludes 40 firms for which there may be some regulatory inquiries relating to their public filings or for which they had incomplete information as of June 30, 2002.

For the final aggregate rankings (i.e., *FR*), the mean (median) composite ranking (*FRC*) for the 459 firms is 7.50 (8.0), while the mean (median) annual report ranking (*FRA*) is 4.66 (5). The mean (median) differential ranking (*FRD*) is 2.84 (3.0). The minimum (maximum) composite rank is 6 (9), the minimum (maximum) annual report rank is 1(8) while the minimum (maximum) differential ranking is 0 (6).

With respect to the rankings of the subcategories, we find relatively high mean/median scores for the financial transparency and information disclosures (*FTC* and *FTA*, respectively, for the composite and annual report rankings), and relatively small differences (*FTD*) between composite and annual report rankings. However, *FTD* has the highest standard deviation among all measures of the differential rankings. Focusing on ownership structure/investor rights (*OWC* and *OWA*, respectively, for the composite and annual report rankings) and board/management structure rankings (*BSC* and *BSA*, respectively, for the composite and annual report rankings), we find relatively lower mean/median scores for both, and relatively larger differential rankings (*OWD* and *BSD*, respectively, for the two categories). These statistics confirm the findings of Patel and Dallas (2002) that there is relatively low disclosure of ownership structure/investor rights and board structure/process in the annual reports and high variation in the financial transparency and information disclosures as contained in the annual reports.

#### 3.2 Variable Measurement and Descriptive Statistics on Firm Characteristics and Market Metrics

We define our event window surrounding the 9:00 am, October 15, 2002, release of the T&D study as the four-day period from October 14 through October 17.<sup>5</sup> Over this window, we collect the daily stock price and the S&P 500 index value from CRSP. S&P 500 industry classifications are obtained from Standard & Poors. All other data are obtained from COMPUSTAT.

In order to compute returns, we use the stock price adjusted for dividends and stock splits. We compute the risk-adjusted abnormal return in the following manner.<sup>6</sup> The raw return for firm *i* is measured as the difference in adjusted stock price of the end of the period in question and the beginning of

<sup>5</sup> We suspect that some market participants may have already learned about the results of the report before October 15. Since October 14 is a Monday, we extend the window to only one day prior to the announcement date.

<sup>6</sup> We examine risk-adjusted returns in part because Patel and Dallas (2002) document a negative association between market beta and disclosure ranking, implying that greater disclosure is associated with lower risk.

the period, divided by the beginning of period price. The market return is measured by the difference of the end of the period and the beginning of the period S&P500 Indices, divided by the beginning of the period index. Firm *i*'s abnormal return is measured by subtracting the product of firm *i*'s beta and the market return from firm *i*'s raw return. Market beta for each firm is the 60 months' beta as of November 30, 2002 as computed and reported by Media General Financial Services. Firm size is measured as the market value of equity. Panel B of Table 1 reports the descriptive statistics of the sample firms for the accounting and market variables.

#### 4. Empirical Analysis

##### 4.1 The Association Between Risk-Adjusted Returns and the T&D Rankings During the Event Period

To evaluate if the market views the release of S&P's report as providing new information to the markets regarding disclosure practices, we evaluate the following models:

$$\begin{aligned} \text{ABN1: } \text{Abn}_i &= \alpha + \gamma^{\text{TDX}} \text{TDX}_i + \varepsilon_i \quad \text{for } \text{TD} = \text{FR, OW, FT or BS, and } X = \text{C, A or D.} \\ \text{ABN2: } \text{Abn}_i &= \alpha + \gamma^{\text{TDC}} \text{TDC}_i + \gamma^{\text{TDD}} \text{TDD}_i + \varepsilon_i \quad \text{for } \text{TD} = \text{FR, OW, FT or BS} \\ \text{ABN3: } \text{Abn}_i &= \alpha + \gamma^{\text{OWC}} \text{OWC}_i + \gamma^{\text{OWD}} \text{OWD}_i + \gamma^{\text{FTC}} \text{FTC}_i + \gamma^{\text{FTD}} \text{FTD}_i + \gamma^{\text{BSC}} \text{BSC}_i + \gamma^{\text{BSD}} \text{BSD}_i + \varepsilon_i \end{aligned}$$

where:

$\text{Abn}_i$  = firm *i*'s abnormal (risk-adjusted) return over four days (Oct.14 to Oct. 17, 2002).

$\gamma$  = coefficients of the respective T&D rankings.

$\text{TDX}_i$  = S&P's T&D composite and annual report rankings and their differences. As defined previously, they include *FRC*, *FRA*, *FRD* (final rankings), *OWC*, *OWA*, *OWD* (ownership structure rankings), *FTC*, *FTA*, *FTD*, (financial transparency rankings), *BSC*, *BSA* and *BSD* (board structure rankings). Suffixes *C*, *A*, and *D* denote composite, annual report, and difference, respectively.

*TDC* = Composite ranking for *FR*, *OW*, *FT* and *BS*.

*TDA* = Annual Report T&D ranking for *FR*, *OW*, *FT* and *BS*.

$\text{TDD} = \text{TDC} - \text{TDA}$

Table 2 reports the regression results for models ABN1, ABN2 and ABN3.

#### Insert Table 2 here

If the market perceives cross-sectional differences in TD rankings as conveying new information on firms' disclosure practices, then we should observe a positive association between the disclosure rankings and risk-adjusted returns and a negative association between the differential rankings

and risk-adjusted returns. Panel A of Table 2 reports the association between risk-adjusted returns and the overall final rankings (*FR*) and the ownership structure rankings (*OW*). Model ABN1 with *FRA* as the only independent variable indicates that *FRA* has a significant positive effect on abnormal returns, while model ABN1 with *FRD* as the only independent variable indicates that *FRD* has a significant negative effect. Model ABN1 with *FRC* as the only independent variable does not report a significant coefficient of *FRC*. These findings suggest that the market returns are associated with the *FRA* and *FRD*. However, *FRA* and *FRD* are highly correlated as  $\text{FRC} = \text{FRA} + \text{FRD}$ . When *FRC* is fixed, an increase in *FRA* results in a decrease in *FRD*. In Model ABN2, we directly test the effect of *FRD* on the abnormal returns after controlling for *FRC*. A significantly negative coefficient on *FRD* in the model ABN2 will indicate that, for firms with the same *FRC*, a higher *FRD* (higher *FRA*) is associated with lower (higher) abnormal returns. The results of the ABN2 model indeed show a significantly negative *FRD*, which is consistent with the results of the ABN1 model in that a higher *FRD* (higher *FRA*) is associated with lower (higher) abnormal returns. *FRC* continues to be insignificant in the ABN2 model. Moreover, Model ABN1 with *FRD* as the independent variable has reports an adjusted R-square (at 0.83%) that is higher than the model ABN2 (0.63%). This indicates that *FRC* does not have additional explanatory power relative to *FRD* for explaining variations in risk-adjusted returns. These findings suggest that the market is concerned mainly about the differential rankings and responds negatively to differences between annual and composite rankings.

Panel A in Table 2 also shows that both *OWA* and *OWD* have significant coefficients in Model ABN1, while only *OWD* has a significant coefficient in Model ABN2 (one-tailed  $p = 0.005$ ). We interpret the results dealing with *OWC* and *OWD* jointly as evidence that the abnormal returns are associated with differences in disclosure rankings between the annual report and the composite reports. Further, these associations are stronger than those for the *FR* variables. Panel B in Table 2 reports the associations between risk-adjusted returns and the remaining two subcategories of *FT* and *BS* rankings, respectively. Panel B reports one-tailed significance for *FTD* across both ABN1 and ABN2 models, with both at the  $p < 0.05$  level. We find similar, though weaker, results for the *BSD* variables (one-tailed  $p = 0.065$  in Model ABN1 and one-tailed  $p = 0.056$  in Model ABN2).

Panel C reports our results for Model ABN3, which includes all three subcategories of rankings. After including all rankings in the three subcategories, we find that *OWC* is very weakly positively related to abnormal returns (one-tailed  $p = 0.099$ ), while *OWD* is significantly negative (one-tailed  $p = 0.032$ ), thus suggesting that *OWD* is the driving force for the

association between *FRD* and the abnormal returns documented in Panel A.

**4.2 Controlling for the Earnings Announcements during the Event Period**

With respect to earnings announcements, a total of 144 firms announced earnings during our event window of October 14 to October 18. Previous research has suggested that a link exists between disclosure and earnings response coefficients. For example, Gelb and Zarowin (2000) document a positive association between disclosure level and earnings quality. To control for the interaction between disclosure and earnings response coefficients, we interact earnings forecast errors (*FE*) with 0/1 dummy variables to indicate low and high rankings of *TDA* and *TDD* (where *TD* represents a particular disclosure ranking). To maintain the additive feature of  $TDC = TDA + TDD$ , we add the dummy measures of *TDA* and *TDD* to derive the dummy measure of *TDC*. Thus, in similar fashion,  $\phi^{OWC}$ ,  $\phi^{OWD}$ ,  $\phi^{FTC}$ ,  $\phi^{FTD}$ ,  $\phi^{BSC}$  and  $\phi^{BSD}$  each measure the change in ERC when the level of the composite rankings or the differential rankings is high for the respective subcategory. Given these specifications, we use the following regression models to examine whether the results in the Table 2 are valid after controlling for the coinciding earnings announcements:

$$\begin{aligned} \text{ERC2: } Abn_i &= \alpha + \gamma^{TDC} TDC_i + \gamma^{TDD} TDD_i + \phi FE_i + \phi^{TDC} D_{TDC_i} FE_i + \phi^{TDD} D_{TDD_i} FE_i + \varepsilon_i \\ \text{ERC3: } Abn_i &= \alpha + \gamma^{OWC} OWC_i + \gamma^{OWD} OWD_i + \phi FE_i + \phi^{OWC} D_{OWC_i} FE_i + \phi^{OWD} D_{OWD_i} FE_i \\ &\quad + \gamma^{FTC} FTC_i + \gamma^{FTD} FTD_i + \phi^{FTC} D_{FTC_i} FE_i + \phi^{FTD} D_{FTD_i} FE_i \\ &\quad + \gamma^{BSC} BSC_i + \gamma^{BSD} BSD_i + \phi^{BSC} D_{BSC_i} FE_i + \phi^{BSD} D_{BSD_i} FE_i + \varepsilon_i \end{aligned}$$

where:

- $FE_i$  = Earnings-per-share forecast error for firm *i* when earnings are announced during the event period. Forecast error is measured as the difference between actual EPS and estimated EPS, divided by the absolute value of estimated EPS.
- $D_{TDD_i}$  = 1 if *TDD<sub>i</sub>* has a rank higher than the median, zero otherwise.
- $D_{TDA_i}$  = 1 if *TDA<sub>i</sub>* (i.e., the *TD* rank from annual report) has a rank higher than the median, zero otherwise.
- $D_{TDC_i} = D_{TDA_i} + D_{TDD_i}$
- $\phi$  = ERC (earnings response coefficient) when both  $D_{TDC_i}$  and  $D_{TDD_i}$  equal zero (that is, low composite and low differential rankings).
- $\phi^{TDC}$  = Change in ERC when  $D_{TDC_i}$  equals 1; in other words, this coefficient indicates the effect of *TDC* on earnings response coefficient when the disclosure rank level is high.
- $\phi^{TDD}$  = Change in ERC when *TDD* is high versus when *TDD* is low, this coefficient indicate the effect of *TDD*

on earnings response coefficient when the disclosure rank difference is high.

- TDC* = Composite ranking for *FR*, *OW*, *FT* and *BS*.
- TDA* = Annual report T&D ranking for *FR*, *OW*, *FT* and *BS*.
- TDD* = *TDC* – *TDA*

The ERC2 model thus incorporates controls for earnings announcements for the previously estimated ABN2 models, while the ERC3 model does the same for the ABN3 models. Though the coefficients on these interaction terms can inform us the effects of disclosures rankings on the ERC, our main purpose here is to test whether the coefficients on *TDC* (*TDD*) continue to be positively (negatively) related to the abnormal returns after controlling for the earnings announcement. Table 3 reports the estimation results for these models.

**Insert Table 3 here**

By comparing the results from Table 3 with those from Table 2, we can evaluate the effects of adding *FE* variables to the respective ABN2 and ABN3 models. The adjusted R-squared statistics have changed from 0.63% to 2.55% for *FR*, from 1.05% to 1.07% for *OW*, from 0.30% to 1.09% for *FT*, from 0.14% to 0.56% for *BS* and from 0.58% to 6.75% for the combined model (i.e., from ABN3 to ERC3). These results imply that the earnings announcements have significant explanatory power for abnormal returns that are incremental to the release of the disclosure rankings. Table 3 reports results that are very similar to those in Table 2. When the overall level of disclosure is examined (the first column of results), we find the coefficient on *FRD* to be significantly negative (two-tailed  $p = 0.027$ ). In the second column of results, *OWD* has a significantly negative effect (two-tailed  $p = 0.010$ ). The third column documents a significantly negative coefficient on *FTD* (two-tailed  $p = 0.079$ ), while the fourth column reports a negative coefficient on *BSD* that is significant only using a one-tailed test (two-tailed  $p = 0.142$ ). In the ERC3 model with all the sub-rankings included, we find *OWD* to be the only significant disclosure variable ( $p = 0.024$ ). In summary, this section reports the results of our tests controlling for the effect of earnings announcements on the abnormal returns. We continue to find that *FRD* is negatively related to the abnormal returns and *OWD* is the subcategory that driving the relation.

**4.3 Robustness Tests**

**4.3.1 ERC Analyses Only for Firms with Earnings Announcements**

We rerun our ERC models by deleting firms without earnings announcements. This leaves us with a total

of 142 firms during the 4-day event window (two firms out of 144 announcing earnings were excluded due to unavailability of forecast errors). The untabulated results document a model adjusted  $R^2$  of 13.66%, higher than when the whole sample was analyzed. Our general conclusion reported in the previous section remains unchanged.

#### 4.3.2 Controls for Industry, Beta and Size Differences

We add industry dummies to all the models to test if the omitted industry variables have any effect on our conclusion. For the ABN and ERC models, adding industry dummies does not change our general conclusions. Previous research also shows that ERCs are affected by firm characteristics such as risk and size. When we add interactive variables of market beta, size and *FE* in the ERC3 model, our results are similar to previously reported.

#### 4.3.5 Use of Different Return Metrics

We use different return metrics including raw returns, market-adjusted return and industry-adjusted return metrics for the ERC models. Since these returns are not risk adjusted, the coefficients of *FT* variables and of *BS* variables behave as though the return metric has not been adjusted for risk. However, the results reported in Section 4.2 remain qualitatively unchanged.

### 5. Discussions and Conclusion

Accounting frauds, like Enron's and Worldcom's, have resulted in corporate governance being one of the more widely discussed issues in the financial press. In addition to the frauds perpetrated on the investing public, belated disclosures of failed business ventures and reports of excessive executive compensation have dominated much of the public and political discourse and have prompted calls for greater mandated disclosures. The S&P T&D study develops a model of disclosures structured around three dimensions of disclosure: ownership structure and investor rights (*OW*), financial transparency and information disclosures (*FT*) and board and management structure and process (*BS*). Their research results include rankings of the disclosure quantities for three subcategories and a compiled final ranking for both the annual reports (-A) and the required regulatory filings (-C).

We evaluate whether the release of the disclosure rankings provided new information to the financial markets. Our empirical analysis focuses on the association between the relative disclosure rankings of these three disclosure dimensions and risk-adjusted abnormal returns in the period surrounding the announcement date of the S&P's report. Previous research studies (e.g., Patel and Dallas, 2002, Botosan and Plumlee, 2002, Gelb and Zarowin, 2000) report

that higher levels of financial disclosure are associated with reduced firm risk, increased liquidity, higher prices, and higher ERCs. These studies link managers' disclosure decisions to changes in stockholders' wealth through various market mechanisms. Our study of the S&P T&D rankings allows us to extend this research stream to include corporate governance-related disclosures as well.

Based on the two notions that higher disclosure improves liquidity which leads to higher prices and that the post-Enron market favors firms with more transparent disclosure practices, we predict that, when the S&P T&D rankings were made public, they represented new information, and the market would respond to this new information favorably for firms with greater disclosure. This leads us to evaluate the effects of the rankings on the risk-adjusted abnormal return surrounding the announcement date. We hypothesize that the abnormal return will be positively related to the composite rankings and negatively related to the differential rankings. A larger difference in disclosure quantity between the 10-Ks/proxy statements and annual reports would be consistent with managers engaging in a selective disclosure strategy between disclosure vehicles.

Our regression results indicate that the market responds negatively to firms that have larger differences between the annual report rankings and composite rankings. On the other hand, we generally do not find significant associations between the composite rankings and abnormal returns. These results indicate that the composite rankings did not bring new information to the market while the differences between the composite rankings and the annual rankings revealed new information to the market. This may also be due to the fact that the high-profile release of the rankings directed the public attention to the differential levels of disclosure by identifying firms that were not disclosing adequately in the annual reports (see Patel and Dallas 2002). The notion of selective disclosure in the prominent annual report appears to have been viewed by the market as an indication of poor disclosure practice, thus resulting in the negative market reaction.

We also find the subcategory of ownership structure and investor rights to be the driving force behind the observed abnormal returns. This might be the case that the other two categories, financial disclosure and information disclosure and board and management structure and process, had been more closely studied by the market; therefore, the market was aware of the differences between annual and composite reports for these two categories. This might also have been caused by the fact that the disclosure items in the subcategory of ownership structure and investor rights are more difficult to identify and assess; as a result, the T&D rankings are able to provide new quantitative information to the market with regard to firms' disclosures in this

subcategory.

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## Appendix: Individual Transparency and Disclosure Questions

Ownership Structure and Investor Rights (Total of 28 questions)

### Transparency of ownership

- \* Provide a description of share classes?
- \* Provide a review of shareholders by type?
- \* Provide the number of issued and authorized but non-issued ordinary shares? (2)
- \* Provide the par value of issued and authorized but non-issued ordinary shares? (2)
- \* Provide the number of issued and authorized but non-issued shares of preferred, nonvoting, and other classes? (2)
- \* Provide the par value of issued and authorized but non-issued shares of preferred, non-voting, and other classes? (2)
- \* Does the company disclose the voting rights for each class of shares?

### Concentration of ownership

- \* Top 1, 3, 5, or 10 shareholders disclosed? (4)
- \* Shareholders owning more than 10, 5, or 3 percent is disclosed? (3)
- \* Does the company disclose percentage of cross-ownership?

### Voting and shareholder meeting procedures

- \* Is there a calendar of important shareholder dates?
- \* Review of shareholder meetings (could be minutes)?
- \* Describe procedure for proposals at shareholder meetings?
- \* How shareholders convene an extraordinary general meeting?
- \* How shareholders nominate directors to board?
- \* Describe the process of putting inquiry to board?
- \* Does the annual report refer to or publish Corporate Governance Charter or Code of Best Practice? (2)
- \* Are the Articles of Association or Charter Articles of Incorporation published?

Financial Transparency and Information Disclosure (Total of 35 questions)

### Business focus

- . Is there a discussion of corporate strategy?
- . Report details of the kind of business it is in?
- . Does the company give an overview of trends in its industry?
- . Report details of the products or services produced/provided?
- . Provide a segment analysis, broken down by business line?
- . Does the company disclose its market share for any or all of its businesses?
- . Does the company report basic earnings forecast of any kind? In detail? (2)
- . Disclose output in physical terms?



- . Does the company give an output forecast of any kind?
- . Does the company give characteristics of assets employed?
- . Does the company provide efficiency indicators (ROA, ROE, etc.)?
- . Does the company provide any industry-specific ratios?
- . Does the company disclose its plans for investment in the coming years?
- . Does the company disclose details of its investment plans in the coming years?

*Accounting policy review*

- . Provide financial information on a quarterly basis?
- . Does the company discuss its accounting policy?
- . Does the company disclose accounting standards it uses for its accounts?
- . Does the company provide accounts according to the local accounting standards?
- . Does the company provide accounts in alternate internationally recognized accounting method?
- \* Does the company provide each of the balance sheet, income statement, and cash-flow statement by internationally recognized methods? (4)
- . Does the company provide a reconciliation of its domestic accounts to internationally recognized methods?

**Appendix:** Individual Transparency and Disclosure Questions

*Accounting policy details*

- . Does the company disclose methods of asset valuation?
- . Does the company disclose information on method of fixed assets depreciation?
- . Does the company produce consolidated financial statements?

*Related party structure and transactions*

- . Provide a list of affiliates in which it holds a minority stake?
- \* Does the company disclose the ownership structure of affiliates?
- \* Is there a list/register of related party transactions?
- . Is there a list/register of group transactions?

*Information on auditors*

- . Does the company disclose the name of its auditing firm?
- . Does the company reproduce the auditors' report?
- . Disclose how much it pays in audit fees to the auditor?
- . Disclose any non-audit fees paid to auditor?

Board Structure and Process (Total of 35 Questions)

*Board structure and composition*

- . Is there a chairman listed?
- . Detail about the chairman (other than name/title)?
- . Is there a list of board members (names)?
- . Are there details about directors (other than name/title)?
- . Details about current employment/position of directors provided?
- . Are details about previous employment/positions provided?

- . Disclose when each of the directors joined the board?
- . Classifies directors as an executive or an outside director?

*Role of the Board*

- . Details about role of the board of directors at the company?
- . Is there disclosed a list of matters reserved for the board?
- . Is there a list of board committees?
- . Review last board meeting (could be minutes)?
- . Is there an audit committee?
- . Disclosure of names on audit committee?
- . Is there a remuneration/compensation committee?
- . Names on remuneration/compensation committee)?
- . Is there a nomination committee?
- . Disclosure of names on nomination committee?
- . Other internal audit function besides audit committee?
- . Is there a strategy/investment/finance committee?

*Director training and compensation*

- . Disclose whether they provide director training?
- . Disclose the number of shares in the company held by directors?
- . Discuss decision-making process of directors' pay?
- . Are specifics of directors' salaries disclosed (numbers)?
- . Form of directors' salaries disclosed (cash, shares, etc.)?
- . Specifics disclosed on performance-related pay for directors?

*Executive compensation and evaluation*

- . List of the senior managers (not on the board of directors)?
- . Backgrounds of senior managers disclosed?
- . Number of shares held by the senior managers disclosed?
- . Disclose the number of shares held in other affiliated companies by managers?
- . Discuss the decision-making of managers' (not board) pay?
- . Numbers of managers' (not on board) salaries disclosed?
- . Form of managers' (not on board) salaries disclosed?
- . Specifics disclosed on performance-related pay for managers?
- . Details of the CEO's contract disclosed?

Note: These questions/attributes were reproduced from Standard & Poor's Transparency and disclosure: Overview of Methodology and Study Results – United States, available at <http://www.governance.standardandpoor>.

**Table 1.** Descriptive Statistics

Panel A: Descriptive Statistics of S&P T&D Rankings												
Statistics	<i>FRC</i>	<i>FRA</i>	<i>FRD</i>	<i>OWC</i>	<i>OWA</i>	<i>OWD</i>	<i>FTC</i>	<i>FTA</i>	<i>FTD</i>	<i>BSC</i>	<i>BSA</i>	<i>BSD</i>
Mean	7.50	4.66	2.84	5.65	3.04	2.60	8.14	7.14	1.01	8.20	3.54	4.66
Standard deviation	0.53	1.04	0.98	0.89	1.08	1.17	0.65	1.40	1.29	0.57	1.29	1.25
Median	8	5	3	6	3	2	8	8	1	8	4	5
Minimum	6	1	0	4	0	0	6	2	0	5	0	0
1%	7	2	0	4	0	0	7	2	0	7	1	1
25%	7	4	2	5	3	2	8	7	0	8	2	4
75%	8	5	3	6	4	3	9	8	1	9	4	6
99%	8	8	6	8	6	6	10	9	6	9	8	7
Maximum	9	8	6	9	7	7	10	10	6	10	9	8

**Panel B:** Descriptive Statistics of Earnings, Returns and Selected Variables of Firm Characteristics

	Beta	Market Value (mm \$)	EPS	FE	Raw Return	Beta-Adjusted Return
Mean	0.97	17,147	0.49	0.051	0.059	-0.003
Std. Deviation	0.71	34,332	0.48	0.326	0.084	0.079
Median	0.81	7,137	0.43	0.017	0.060	0.000
Minimum	-0.37	577	-3.05	-2	-0.372	-0.460
1%	-0.09	937	-0.39	-1	-0.201	-0.315
25%	0.50	3,634	0.19	0	0.015	-0.040
75%	1.26	13,832	0.71	0.077	0.107	0.043
99%	3.32	196,607	1.79	1.286	0.322	0.160
Maximum	3.78	308,383	2.02	3	0.471	0.241

Notes to Table 1: There are a total of 459 firms that have all data available. A total of 460 firms in S&P 500 were ranked. The reported ranks range from 1 to 10. *FR* denotes the final ranking for all subcategories combined, and *OW*, *FT*, and *BS* denote the subcategories of ownership structure and investor rights, financial transparency and information disclosure, and board and management structure and process, respectively. The suffixes *-C*, *-A*, and *-D* denote composite, annual report, and difference, respectively. *FRC* represents the composite final rankings based on annual reports, 10-Ks, and proxy statements together. *FRA* represents the final rankings based on the annual report only. The differential "final ranking" is defined as  $FRD = FRC - FRA$ . Similarly, *OWC* is the sub-ranking for ownership structure and investor rights based on the annual reports, 10-Ks, and proxy statements together; *OWA* is the subcategory ranking based on the annual report only; and  $OWD = OWC - OWA$ . The other subcategory rankings (*FTC*, *FTA*, *FTD*, *BSC*, *BSA* and *BSD*) are measured in a similar fashion. The risk-adjusted returns are calculated over the 4-day event period surrounding the announcement of S&P's T&D scores (i.e., Oct. 14-17, 2002). *FE* is the forecast error. There are a total of 251 firms that made earnings announcements during the period from Oct. 8 to Oct. 23 with 144 announcements issued during our event period (October 14-17), 15 announcements in the four days prior to our event period, and 92 announcements in the four days after our event period. However, due to zero estimated earnings, four observations are dropped.

**Table 2.** Regressions of Risk-Adjusted Returns on S&P T&D Rankings

Estimated Models:

$$ABN1: Abn_i = \alpha + \gamma^{TDX} TDX_i + \epsilon_i \text{ for } TD = FR, OW, FT \text{ or } BS, \text{ and } X = C, A \text{ or } D.$$

$$ABN2: Abn_i = \alpha + \gamma^{TDC} TDC_i + \gamma^{TDD} TDD_i + \epsilon_i \text{ for } TD = FR, OW, FT \text{ or } BS$$

$$ABN3: Abn_i = \alpha + \gamma^{OWC} OWC_i + \gamma^{OWD} OWD_i + \gamma^{FTC} FTC_i + \gamma^{FTD} FTD_i + \gamma^{BSC} BSC_i + \gamma^{BSD} BSD_i + \epsilon_i$$

Panel A: Regression of Risk-Adjusted Returns on Final Rankings (FR) and Ownership Structure Rankings (OW) using Models ABN1 and ABN2									
	Exp. Sign	Model ABN1 <i>FRA</i>	Model ABN1 <i>FRC</i>	Model ABN1 <i>FRD</i>	Model ABN2 <i>FRC+FRD</i>	Model ABN1 <i>OWA</i>	Model ABN1 <i>OWC</i>	Model ABN1 <i>OWD</i>	Model ABN2 <i>OWC+OWD</i>
Adj. $R^2$		0.68	-0.22	0.83	0.63	1.21	-0.20	0.76	1.05
Intercept	?	-0.030 (0.051)	0.004 (0.939)	0.022 (0.035)	0.009 (0.854)	-0.024 (0.018)	-0.006 (0.777)	0.016 (0.047)	-0.015 (0.509)
<i>FRA</i>	+	0.007 (0.021)	—	—	—	—	—	—	—

<i>FRC</i>	+	—	-0.000 (0.527)	—	0.002 (0.390)	—	—	—	—
<i>FRD</i>	-	—	—	-0.008 (0.014)	-0.008 (0.014)	—	—	—	—
<i>OWA</i>	+	—	—	—	—	0.008 (0.005)	—	—	—
<i>OWC</i>	+	—	—	—	—	—	0.001 (0.379)	—	0.007 (0.064)
<i>OWD</i>	-	—	—	—	—	—	—	-0.006 (0.017)	-0.009 (0.005)

Notes: The number of observation is 459. The numbers in parentheses represent either the two-tailed significance levels (for the intercepts) or the one-tailed significance levels (for the coefficients on the disclosure variables). Boldface indicates significance at  $p < 0.10$ .  $Abn_i$  is the beta-adjusted abnormal return for firm  $i$  during our four-event-day window (see the variables section for details).  $TDX = S\&P$ 's T&D composite and annual report rankings and their differences.  $TD = FR, OW, FT$  or  $BS$ .  $FR$  denotes the final ranking for all subcategories combined, and  $OW, FT$  and  $BS$  denote the subcategories of ownership structure and investor rights, financial transparency and information disclosure, and board and management structure and process, respectively.  $X =$  suffixes  $A, C$  and  $D$ , and these suffixes denote composite rankings, annual report rankings, and differences in rankings, respectively. Thus,  $FRC, FRA$  and  $FRD$  are final rankings;  $OWC, OWA$  and  $OWD$  are ownership structure and investor rights rankings;  $FTC, FTA$  and  $FTD$  are financial transparency and information disclosure rankings, and  $BSC, BSA$  and  $BSD$  are board and management structure and process rankings. Then,  $TDC =$  Composite T&D rankings for  $FR, OW, FT$  and  $BS$ ;  $TDA =$  Annual Report T&D rankings for  $FR, OW, FT$  and  $BS$ ; and  $TDD = TDC - TDA$ .

**Table 2** (continued)

Regressions of Risk-Adjusted Returns on S&P T&D Rankings

Estimated Models:

ABN1:  $Abn_i = \alpha + \gamma^{TDX} TDX_i + \epsilon_i$  for  $TD = FR, OW, FT$  or  $BS$ , and  $X = C, A$  or  $D$ .

ABN2:  $Abn_i = \alpha + \gamma^{TDC} TDC_i + \gamma^{TDD} TDD_i + \epsilon_i$  for  $TD = FR, OW, FT$  or  $BS$

ABN3:  $Abn_i = \alpha + \gamma^{OWC} OWC_i + \gamma^{OWD} OWD_i + \gamma^{FTC} FTC_i + \gamma^{FTD} FTD_i + \gamma^{BSC} BSC_i + \gamma^{BSD} BSD_i + \epsilon_i$

Panel B: Regression of Risk-Adjusted Returns on Financial Transparency Rankings (FT) and Board Structure Rankings (BS) using Models ABN1 and ABN2									
	Exp. Sign	Model ABN1 FTA	Model ABN1 FTC	Model ABN1 FTD	Model ABN2 FTC+FTD	Model ABN1 BSA	Model ABN1 BSC	Model ABN1 BSD	Model ABN2 BSC+BSD
Adj. $R^2$		0.13	-0.10	0.44	0.30	0.36	-0.19	0.28	0.14
Intercept	?	-0.021 (0.227)	0.031 (0.465)	0.005 (0.239)	0.030 (0.476)	-0.015 (0.140)	-0.016 (0.738)	0.020 (0.135)	-0.009 (0.861)
FTA	+	0.003 (0.104)	—	—	—	—	—	—	—
FTC	+	—	-0.004 (0.765)	—	-0.003 (0.725)	—	—	—	—
FTD	-	—	—	-0.005 (0.041)	-0.005 (0.046)	—	—	—	—
BSA	+	—	—	—	—	0.004 (0.053)	—	—	—
BSC	+	—	—	—	—	—	0.002 (0.365)	—	0.004 (0.276)
BSD	-	—	—	—	—	—	—	-0.004 (0.065)	-0.004 (0.056)
Panel C: Regression of Risk-Adjusted Returns on Ownership Structure Rankings (OW), Financial Transparency Rankings (FT) and Board Structure Rankings (BS) using Model ABN3									
	Intercept	OWC	OWD	FTC	FTD	BSC	BSD	Adj $R^2$	
Expected sign	?	+	-	+	-	+	-		
Coefficient	0.031 (0.621)	0.007 (0.099)	-0.009 (0.032)	-0.007 (0.896)	0.001 (0.557)	0.002 (0.357)	-0.002 (0.265)	0.58	

Notes: The number of observations is 459. The numbers in parentheses represent either the two-tailed significance levels (for the intercepts) or the one-tailed significance levels (for the coefficients on the disclosure variables). Boldface indicates significance at  $p < 0.10$ .  $Abn_i$  is the beta-adjusted abnormal return for firm  $i$  during our four-event-day window (see the variables section for details).  $TDX = S\&P$ 's T&D composite and annual report rankings and their differences.  $TD = FR, OW, FT$  or  $BS$ .  $FR$  denotes the final ranking for all subcategories

combined, and *OW*, *FT* and *BS* denote the subcategories of *ownership structure and investor rights*, *financial transparency and information disclosure*, and *board and management structure and process*, respectively. *X* = suffixes *A*, *C* and *D*, and these suffixes denote composite rankings, annual report rankings, and differences in rankings, respectively. Thus, *FRC*, *FRA* and *FRD* are final rankings; *OWC*, *OWA* and *OWD* are ownership structure and investor rights rankings; *FTC*, *FTA* and *FTD* are financial transparency and information disclosure rankings, and *BSC*, *BSA* and *BSD* are board and management structure and process rankings. Then, *TDC* = Composite T&D rankings for *FR*, *OW*, *FT* and *BS*; *TDA* = Annual Report T&D rankings for *FR*, *OW*, *FT* and *BS*; and *TDD* = *TDC* - *TDA*.

**Table 3.** Regressions of Risk-Adjusted Returns on S&P T&D Rankings:  
Controlling for Earnings Announcements

Estimated Models:

$$\begin{aligned} \text{ERC2: } \text{Abn}_i &= \alpha + \gamma^{\text{TDC}} \text{TDC}_i + \gamma^{\text{TDD}} \text{TDD}_i + \phi \text{FE}_i + \phi^{\text{TDC}} D_{\text{TDC}_i} * \text{FE}_i + \phi^{\text{TDD}} D_{\text{TDD}_i} * \text{FE}_i + \varepsilon_i \\ \text{ERC3: } \text{Abn}_i &= \alpha + \gamma^{\text{OWC}} \text{OWC}_i + \gamma^{\text{OWD}} \text{OWD}_i + \phi \text{FE}_i + \phi^{\text{OWC}} D_{\text{OWC}_i} * \text{FE}_i + \phi^{\text{OWD}} D_{\text{OWD}_i} * \text{FE}_i \\ &+ \gamma^{\text{FTC}} \text{FTC}_i + \gamma^{\text{FTD}} \text{FTD}_i + \phi^{\text{FTC}} D_{\text{FTC}_i} * \text{FE}_i + \phi^{\text{FTD}} D_{\text{FTD}_i} * \text{FE}_i \\ &+ \gamma^{\text{BSC}} \text{BSC}_i + \gamma^{\text{BSD}} \text{BSD}_i + \phi^{\text{BSC}} D_{\text{BSC}_i} * \text{FE}_i + \phi^{\text{BSD}} D_{\text{BSD}_i} * \text{FE}_i + \varepsilon_i \end{aligned}$$

Model	Model ERC2 (FR)	Model ERC2 (OW)	Model ERC2 (FT)	Model ERC2 (BS)	Model ERC3
Adj. R <sup>2</sup>	2.55	1.07	1.09	0.56	6.75
Intercept	0.026 (0.583)	-0.012 (0.572)	0.034 (0.418)	0.002 (0.974)	0.064 (0.301)
<i>FRC</i>	-0.001 (0.924)	—	—	—	—
<i>FRD</i>	-0.008 (0.027)	—	—	—	—
<i>OWC</i>	—	0.006 (0.154)	—	—	0.006 (0.242)
<i>OWD</i>	—	-0.009 (0.010)	—	—	-0.010 (0.024)
<i>FTC</i>	—	—	-0.004 (0.501)	—	-0.008 (0.143)
<i>FTD</i>	—	—	-0.005 (0.079)	—	0.002 (0.656)
<i>BSC</i>	—	—	—	0.002 (0.728)	0.000 (0.976)
<i>BSD</i>	—	—	—	-0.004 (0.142)	-0.002 (0.528)
<i>FE</i>	-0.447 (0.004)	0.018 (0.156)	0.031 (0.072)	-0.586 (0.161)	-0.575 (0.163)
<i>D<sub>FRC</sub>FE</i>	0.454 (0.003)	—	—	—	—
<i>D<sub>FRD</sub>FE</i>	0.012 (0.700)	—	—	—	—
<i>D<sub>OWC</sub>FE</i>	—	0.003 (0.936)	—	—	0.327 (0.000)
<i>D<sub>OWD</sub>FE</i>	—	0.018 (0.762)	—	—	-0.069 (0.330)
<i>D<sub>FTC</sub>FE</i>	—	—	0.001 (0.983)	—	-0.029 (0.224)
<i>D<sub>FTD</sub>FE</i>	—	—	-0.051 (0.176)	—	-0.357 (0.000)
<i>D<sub>BSC</sub>FE</i>	—	—	—	0.611 (0.142)	0.673 (0.102)
<i>D<sub>BSD</sub>FE</i>	—	—	—	-0.008 (0.823)	-0.059 (0.339)

Notes: Number of observation is 459. The numbers in parentheses represent the two-tailed significance levels. Boldface indicates significance at  $p < 0.10$ .  $\text{FE}_i$  is the forecast error for firm  $i$  if the firm made an earning announcement during the 4 event days, otherwise,  $\text{FE}_i$  equals 0. There are a total of 144 firms that made earnings announcements in the 4 event days.  $D_{\text{TDD}_i} = 1$  if  $\text{TDD}_i$  has a rank higher than the median, zero otherwise;  $D_{\text{TDA}_i} = 1$  if  $\text{TDA}_i$  (i.e., the TD rank from the annual report) has a rank higher than the median, zero otherwise; and  $D_{\text{TDC}} = D_{\text{TDA}} + D_{\text{TDD}}$ .