MARKET REACTIONS TO ANALYSTS' FORECASTS AND MANDATORY DISCLOSURES

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ABSTRACT

This dissertation investigates the effects of changes in the accounting environment on the capital markets. Included are three manuscripts, each of which, make an important contribution to the accounting literature. The first two manuscripts investigate the impact and importance of analysts' forecasts. The third manuscript documents the impact of eliminating an important accounting disclosure. This dissertation makes the following contributions to the accounting literature. The first manuscript documents that investor skepticism towards meet/beat firms appears to have been a temporary phenomenon and investors have resumed rewarding firms that meet/beat analysts' earnings expectations. Further, the study provides evidence that changes in the analyst forecasting environment also contributed to this temporary decline implying that the scandals did not have as strong of an effect on investors' confidence in earnings as previously believed. The second manuscript contributes to the accounting literature by documenting the importance of meeting/beating cash flow forecasts to participants in the debt markets. Finally, the third manuscript contributes to the existing literature regarding the value relevance of the IFRS – U.S.GAAP reconciliation by documenting a significant decrease in publicly available information to equity investors at the first reporting period following the SEC's decision to eliminate the reconciliation. All of these manuscripts extend what is currently known about the importance of public disclosures to capital market participants.

DEDICATION

I dedicate this dissertation to my wife, Jennifer. Thank you for your love, encouragement, and support.

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ATTRIBUTION

Several colleagues and coworkers aided in the writing and research behind several of the chapters of this dissertation. A brief description of their background and their contributions are included here.

Prof. John J. Maher - Ph.D. (Department of Accounting and Information Systems, Virginia Tech) is the primary Advisor and Committee Chair. Prof. Maher provided guidance and assistance with the writing in Chapters 3 and 4.

Jennifer E. Edmonds - Ph.D. Student in Residence (Department of Accounting and Information Systems, Virginia Tech) provided assistance with the writing and editing for chapters 3 and 4.

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1. INTRODUCTION

This dissertation investigates the effects of changes in the accounting environment on the capital markets. Included are three manuscripts, each of which, make an important contribution to the accounting literature. The first two manuscripts investigate the impact and importance of analysts' forecasts. The third manuscript documents the impact of eliminating an important accounting disclosure. By exploring these current accounting issues, this dissertation expands our current knowledge of the importance of public disclosures to capital market participants.

The first manuscript examines important temporal variations in the reward firms receive for meeting/beating analysts' forecasts of operating earnings per share (EPS). A vast body of research documents a market equity premium for firms that meet analysts' EPS forecasts (Barth et al. 1999; DeFond and Park 2001; Bartov et al. 2002, Givoly, and Hayn 2002; Kasznik and McNichols 2002; Lopez and Rees 2002, Skinner and Sloan 2002). However, Koh et al. (2008) provide evidence that the EPS market premium disappeared during the 2002 – 2005 period. The authors attribute the disappearance of the premium to an increase in investor skepticism following the accounting scandals in 2001 – 2002. While current accounting research attributes the decline to investor skepticism, the first manuscript provides an alternate explanation. During the 2001-2002 time period, analysts began forecasting alternate financial statement items to the public; thus providing investors with multiple performance benchmarks. The theory is that investors tend to focus on the same relevant targets that analysts forecast. In instances where analysts only forecast operating EPS, investors are more likely to form a strong consensus with respect to rewarding for meeting/beating this heuristic target. The study documents that firms with more financial statement items forecasted have smaller EPS market premiums. The

evidence suggests that both the inclusion of multiple forecasts and investor skepticism contributed to the decline in the EPS market premium.

The second manuscript also investigates the importance of alternate targets provided by analysts (other than operating EPS). Specifically, it focuses on the importance and influence of meeting or beating analysts' cash flow forecasts on a firm's cost of debt. The study examines three important metrics related to a firm's cost of debt: initial bond rating, bond yield, and subsequent changes in bond ratings. The results indicate firms meeting/beating analysts' cash flow forecasts have higher initial bond ratings as well as lower initial bond yields. Additionally, firms meeting or beating cash flow forecasts have a higher probability of receiving a debt rating upgrade and a lower probability of a ratings downgrade compared to firms missing cash flow forecasts. A direct comparison of the importance of meeting/beating cash flow versus earnings benchmarks indicates debt market participants appear to value both types of forecasts, but unlike previous equity market findings, neither forecast alone appears to be more important than the other for debt market participants.

The third manuscript investigates the impact of eliminating an important accounting disclosure. The study provides initial evidence regarding the effects of the SEC's decision to eliminate the IFRS-U.S. GAAP reconciliation by examining short-window trading volume reactions for the year of the elimination and the year prior to the elimination. The study provides an important partial snapshot regarding the effects of eliminating U.S. GAAP on the U.S. capital markets. The results indicate that trading volume decreased nearly 60 percent in the year the reconciliation was eliminated. This result is consistent with a decrease in value relevant information available to equity investors. To further validate the findings, the study also compares changes in trading volume for the sample firms with a control group of foreign private

issuers unaffected by the SEC's rule to eliminate the reconciliation. Results find the decrease in announcement period volume to be significantly greater for foreign private issuers that eliminate the reconciliation. These results are consistent with the interpretation that value relevant information has been lost to the capital markets for those firms no longer required to reconcile back to U.S. GAAP.

This dissertation makes the following contributions to the accounting literature. The first manuscript documents that investor skepticism towards meet/beat firms appears to have been a temporary phenomenon and investors have resumed rewarding firms that meet/beat analysts' earnings expectations. Further, the study provides evidence that changes in the analyst forecasting environment also contributed to this temporary decline implying that the scandals did not have as strong of an effect on investors' confidence in earnings as previously believed. The second manuscript contributes to the accounting literature by documenting the importance of meeting/beating cash flow forecasts to participants in the debt markets. Finally, the third manuscript contributes to the existing literature regarding the value relevance of the IFRS – U.S.GAAP reconciliation by documenting a significant decrease in publicly available information to equity investors at the first reporting period following the SEC's decision to eliminate the reconciliation. All of these manuscripts extend what is currently known about the importance of public disclosures to capital market participants.

The remainder of this dissertation proceeds as follows. Section 2 discusses the effect of multiple forecasts on the EPS premium. Section 3 investigates the impact of meeting/beating analysts' cash flow forecasts on a firm's cost of debt. Section 4 discusses the impact of eliminating the IFRS- US GAAP reconciliation. The dissertation concludes in Section 5.

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2. EVIDENCE REGARDING THE DISAPPEARANCE AND PARTIAL RE-EMERGENCE OF THE MEET/BEAT EPS MARKET PREMIUM

Christopher T. Edmonds

2.1 INTRODUCTION

An extensive body of research documents firms receiving a market equity premium for meeting/beating analysts' earnings expectations even after controlling for the news in earnings.[1] Recent evidence reported in Koh et al. (2008) indicates the market premium for meeting or just beating (beating by one penny or less) forecasted EPS completely disappeared, and the premium for beating forecasted EPS by more than a penny greatly diminished following the accounting scandals in 2001 -2002[2]. Koh et al. (2008) interpret these findings as evidence that investors became skeptical of accounting earnings following the accounting scandals, and began to view meeting/beating forecasted EPS as a signal of managerial intervention by means of earnings management. These inferences imply a loss of confidence in the quality of accounting information which has fundamental implications for the accounting profession. My research extends that of Koh et al. (2008) and documents important temporal variations in the reward firms receive for meeting/beating analysts' forecast of operating earnings per share. My research also provides important evidence supporting an alternative explanation regarding the disappearance of the well established meet/beat market premium.

This paper provides evidence suggesting investor skepticism of earnings was not the sole cause of the decline in the meet/beat market premium. During this time period analysts began forecasting alternate financial statement items to the public for the first time; thus providing investors with multiple performance benchmarks. My research provides evidence consistent

[1] For examples see Barth et al. 1999; DeFond and Park 2001; Bartov et al. 2002, Givoly, and Hayn 2002; Kasznik and McNichols 2002; Lopez and Rees 2002, Skinner and Sloan 2002.
[2] Examples of major accounting scandals during this period include Enron, WorldCom, Adelphia, HealthSouth, McKesson, Tyco, and Qwest.

with the conjecture that the EPS forecast became less important as additional forecasts became available and investors expanded their focus to include these alternate targets. Further, my results are consistent with investor skepticism being a temporary phenomenon. Specifically, investor skepticism dampened the premium from the second quarter of 2001 to the fourth quarter of 2004. Investors resumed rewarding firms that meet/beat analysts' EPS expectations approximately three years after the accounting scandals. However, the premium remains lower than its historical average suggesting that the additional financial statement items forecasted by analysts have had a permanent impact on the EPS meet/beat premium.

This paper makes at least two important contributions to the accounting literature. First, this study documents that investor skepticism towards meet/beat firms appears to have been a temporary phenomenon and investors have resumed rewarding firms that meet/beat analysts' earnings expectations. Second, this research provides evidence that investor skepticism was not the only explanation for the decline. This finding is important because it implies the decline documented by Koh et al. (2008) can be at least partially attributed to alternative contemporaneous information that conflicts with earnings, and not solely the result of reduced investor confidence in accounting earnings. The continued availability of additional financial statement forecasts beyond earnings also provides a feasible explanation of why the meet/beat premium has not returned to its historical average.

The remainder of the paper is organized as follows. Section 2.2 reviews the related research. Section 2.3 investigates the decline and return in the EPS meet/beat market premium and penalty. Explanations for the decline in the EPS meet/beat market premium are discussed in Section 2.4. The research design used to test the affect of analysts forecasting additional financial statement items on the EPS meet/beat market premium is presented in Section 2.5. Section 2.6

describes the sample selection process and provides descriptive statistics. Results are presented in Section 2.7 and the paper concludes in Section 2.8.

2.2 RELATED RESEARCH

An extensive body of accounting literature documents the importance of meet or beat signals in capital markets (Burgstahler and Dichev 1997, Degeorge et al. 1999, Bartov et al. 2002, Roychowdhury 2006, Jiang 2008). Prior research presents two psychological explanations for the use of benchmarks. One explanation is that investors utilize analysts' forecasts as a heuristic to reduce information processing costs. It is difficult and costly for investors to retrieve and process all of a firm's financial disclosures and make timely investment decisions. Using heuristic benchmarks is beneficial because it demands less cognitive effort than systematic processing (Uleman and Bargh 1989). To reduce costs, some investors rely on analysts to process information and provide a forecast of future earnings (Burgstahler and Dichev 1997; Degeorge et al. 1999).

A second explanation for the importance of benchmarks is rooted in prospect theory which asserts that people evaluate risky alternatives from a reference point and are more sensitive to losses than gains (Kahneman and Tversky 1979). Analysts' forecasts are a dividing line indicating whether firms met or missed the benchmark. Investors view missing analysts' forecasts as a relative loss whereas meeting the forecasts is interpreted as a gain. This asymmetric gain / loss reaction creates a market premium (penalty) for meeting (missing) the analyst consensus forecast by as little as 1 cent.

The information processing argument or prospect theory can apply to any simple heuristic target; however, the majority of the accounting literature has focused on the importance of meeting or beating analysts' operating earnings expectations (EPS). Degeorge et al. (1999)

document that managers attempt to meet or beat analysts' earnings forecasts. Brown and Caylor (2005) use a more recent time frame and provide evidence that managers are most concerned with avoiding negative earnings surprises compared to avoiding earnings decreases or losses. Multiple other studies report a market equity premium for meeting analysts' forecast of earnings (Barth et al. 1999; Defond and Park 2001; Bartov et al. 2002, Givoly, and Hayn 2002; Kasznik and McNichols 2002; Lopez and Rees 2002, Skinner and Sloan 2002). Additionally, Graham et al. (2005) survey managers and report a significant concern regarding negative market reactions associated with missing analysts' earnings forecast.

2.3 THE DECLINE AND SUBSEQUENT RETURN OF THE EPS MARKET PREMIUM

While there has been extensive empirical evidence documenting the importance of meeting/beating forecasted EPS, most of these studies rely on data prior to 2002. Using data from 1987 through the second quarter of 2005, Koh et al. (2008) document the importance of this signal greatly diminished following the accounting scandals in 2001. To extend Koh et al.'s work, I estimate the meet/beat premium for each year from 1987 to 2007 using the following model consistent with Koh et al. (2008):

$$CAR_{iq} = \beta_0 + \beta_1 UE\_EPS_{iq} + \beta_2 JustMeet_{iq} + \beta_3 Beat_{iq} + \lambda_{iq} \quad (1)$$

CAR_{iq} refers to the cumulative market-adjusted (value-weighted) return.[3] Following Bartov et al. (2002) and Koh et al. (2008) the event window is defined as starting two days after the first forecast (F_{first}) of the period and ending one day after the firm announces earnings.[4] To

[3] As a sensitivity check, I also estimated returns using cumulative (equal-weighted) returns, buy-and-hold (value and equal) weighted returns, cumulative beta-adjusted returns, and buy-and-hold beta-adjusted returns. The results are similar when the CAR is defined in terms of these alternate return metrics.

[4] This design choice will likely result in longer event windows for firms with greater analyst following. As a sensitivity check, I also used a fixed event window starting two days subsequent to the previous quarter's earnings announcement date and ending one day after this quarter's earnings announcement. Results were unaffected.

ensure that information related to last period's earnings does not confound the event window, F_{first} is defined as the first forecast of the period starting at least three days subsequent to the previous period's earnings announcement. UE_EPS_{iq} is the firm's unexpected earnings scaled by stock price at the beginning of the quarter defined as $(EPS_{iq} - F_{first}) / P_{q-1}$ where EPS_{iq} is the firm's actual earnings and P_{q-1} is the stock price at the beginning of the quarter.

The firms that meet/beat analysts' expectations are divided into two groups: firms that just met analysts' expectations (*JustMeet*) and firms that beat analysts' expectations (*Beat*). $JustMeet_{iq}$ is one if the firm meets or beats the last forecast of the period (F_{last}) by no more than 1 cent ($0 \leq EPS_{iq} - F_{last} \leq .01$).[5] $Beat_{iq}$ is one if the firm beats expectations by more than 1 cent ($EPS_{iq} - F_{last} > .01$). To control for the possibility that earnings information leaks out prior to the earnings announcement date, F_{last} is defined as the last forecast of the period made at least three days prior to the earnings announcement date[6]. The coefficients on these indicators capture the market premium for beating analysts' expectations.

Research documents that managers attempt to avoid negative "bad news" earnings surprises (Payne and Robb 2000; Brown 2001; Burgstahler and Eames 2001) and also provides evidence that investors are asymmetric in their reactions to beating and missing expectations (Skinner and Sloan 2002). Correspondingly, the penalty for missing analysts' expectations is estimated as follows:

$$CAR_{iq} = \alpha_0 + \alpha_1 UE\_EPS_{iq} + \alpha_2 JustMiss_{iq} + \alpha_3 Miss_{iq} + \delta_{iq} \qquad (2)$$

[5] A significant amount of academic research (Bartov et al. 2002; Brown and Caylor 2005; Jensen et al. 2004;and Koh et al. 2008) and the financial press (see Morgensen 2004) focus on the 1 cent cutoff. The argument is that managers face large incentives to attain this additional cent in order to meet the market's expectations. All inferences are similar when the cutoff is defined at 2 cents.

[6] The average forecast is used if multiple estimates are made on this date.

JustMiss$_{iq}$ is 1 when firm *i* misses expectations by no more than 1 cent and 0 otherwise, while *Miss*$_{iq}$ is 1 when firm *i* misses expectations by more than 1 cent and 0 otherwise. The coefficients on these indicators capture the market penalty for missing analysts' expectations.

Coefficient estimates and p-values for both meeting/beating (Equation 1) and missing (Equation 2) expectations are displayed in Table 1. Consistent with expectations, all meet/beat coefficients (*JustMeet*$_{iq}$ and *Beat*$_{iq}$) are positive and all miss coefficients (*JustMiss*$_{iq}$ and *Miss*$_{iq}$) are negative.[7] The market premium for just meeting expectations (β_2) disappears during the 2002 – 2004 period and the premium for beating expectations (β_3) diminishes during this period. The penalty for just missing expectations (α_2) and missing expectations (α_3) also diminishes during the 2001 to 2004 period. Importantly, the reward for just meeting expectations (β_2) returns in 2005 and continues to exist in subsequent years. The reward for beating expectations (β_3) and the penalty for just missing (α_2) and missing expectations (α_3) also become more important post 2004. Overall, the results presented in Table 1 are consistent with the sharp decline of the market premium or penalty being a temporary phenomenon. However, as documented in more detail below the premium or penalty after 2004 has not fully recovered and remains lower than it was prior to 2001.

[INSERT TABLE 1 HERE]

2.4 EXPLANATIONS FOR THE DECLINE IN THE MARKET PREMIUM (PENALTY) FOR MEETING/BEATING (MISSING) ANALYSTS' EPS FORECAST

Koh et al. (2008) attribute the decline in the meet/beat premium to increased investor skepticism following the accounting scandals. They interpret their findings as evidence that

[7] Bartov et al. 2002; Brown and Caylor 2005; Koh et al. 2008 all reported positive coefficient on meet/beat EPS benchmarks and negative coefficients on miss EPS benchmarks.

following the accounting scandals, investors began to associate meeting/beating expectations as a signal of managerial intervention either through expectation or earnings management and, therefore, stopped rewarding meet/beat firms. The expectation management argument assumes management intentionally lowers analysts' expectations, thus making the EPS target easier to meet. Investors respond to the more attainable target by decreasing the reward given to meet/beat firms.[8] The earnings management argument follows similar reasoning except it assumes management is intentionally manipulating earnings through real or accrual activities in order to meet the target. Under both arguments, the meet/beat signal is a weaker indicator of future operating performance and investors respond by decreasing the reward offered to firms meeting this target.

Koh et al.'s (2008) finding that the EPS meet/beat market premium diminished directly following the accounting scandals supports the latter argument of earnings management. The media attention surrounding the major accounting scandals such as Enron, WorldCom, etc. likely increased investors' awareness of firms' use of earnings management to meet or beat analysts' forecasts and increased investor skepticism related to meet or beat firms. This finding is potentially troublesome for the accounting profession in that it signifies a loss of investor confidence in accounting information.

I pose an alternate explanation for the decline in the meet/beat premium and miss penalty, and conjecture that the decline in the meet/beat EPS premium is partially attributable to analysts' focusing on alternate financial statement items. The logic is that investors tend to focus on the same relevant targets that analysts forecast. When analysts only forecast operating EPS, investors

[8] Several studies have shown that meeting or beating analysts' expectations has become more common in the past decade suggesting that either managers are managing analysts' expectations of earnings or managing actual earnings numbers (Brown 2001; Matsumoto 2002; Brown and Caylor 2005; Koh et al. 2008; Keung et al. 2009).

are more likely to form a strong consensus with respect to rewarding for meeting/beating this heuristic target.

Subsequent to the accounting scandals, analysts began providing forecasts of many additional financial statement items beyond operating EPS. This increase in additional forecasts is displayed in Figure 1 where Panel A documents a sharp increase in forecasts in 2002 of new financial statement items. Analysts began forecasting multiple income statement and balance sheet items, as well as commonly used performance measures[9]. Furthermore, the number of cash flow (CPS) and sales forecasts (SAL) also substantially increased around 2002. The sharp decrease in the dominance of earnings forecasts can be seen more clearly in Panel B, which graphs operating EPS forecasts as a percent of total forecasts over time. A dramatic shift occurs in 2001 and 2002 with regard to the number of financial accounting items forecast by analysts. In 2001 forty-nine percent of all forecasts were EPS forecasts. By 2002 only seventeen percent of all forecasts were EPS. This basic relationship of forecasting numerous financial statement items continues through 2008.

[INSERT FIGURE 1]

In order for these forecasts of additional financial statement items to serve as alternate performance benchmarks that are useful to investors[10], the actual accounting numbers must also be reported at the earnings announcement date. The amount of financial information disclosed

[9] Specifically, analysts began forecasting GAAP earning (GPS), net income (NET), earnings before income (EBI), earnings before tax (EBT), earnings before goodwill (EBG), operating profit (OPR), profit before taxes (PRE), book value per share (BPS), net asset value (NAV), net debt value (NDT), dividends per share (DIV), return on assets (ROA), and return on equity (ROE) for a significant number of firms.

[10] Several recent studies have documented that investors rely on these alternate forecasts beyond EPS. Recent research has documented that investors rely on these alternate forecasts and reward firms for meeting analysts' cash flow and revenue forecasts (Defond and Hung 2003; Rees and Sivaramakrishnan 2007; Zhang 2008; Brown and Pinello 2009).

within firms' earnings announcement press releases has also increased over time (Francis et al. 2002). Press releases now include information such as detailed financial statements, current operating data, and nonrecurring items. They find that the disaggregated earnings components now being voluntarily provided by management have increased the usefulness of the press releases to investors. Given the additional financial items forecasted by analysts and reported by firms, investors are less likely to focus on the singular goal of meeting or beating analysts' forecast of operating EPS.

Table 2 shows the percent of firms receiving additional forecasts, beyond operating EPS, by year. A dramatic change in the percent of firms receiving multiple forecasts occurs in 2002 as demonstrated by the decreasing percentage in Column zero. The percent of firms that only received an earnings forecast (*Additional_Items* = 0) decreased from 59.36% in 2001 to 31.36% in 2002. Additionally, 2002 is the first year that any firm received more than three additional forecasts (*Additional_Items* > *3*). It is also interesting to note that the percent of firms receiving more than just an operating EPS forecast peaked in 2004 at 74.57% (100% – 25.43%). Since that time a small percentage of analysts have reverted back to only issuing an earnings forecast. The dramatic shift in the number of additional forecasted items from 2002 to 2004 closely corresponds to the decline in the meet/beat premium and penalty presented in Table 1; and is consistent with investors rewarding or penalizing less for meet/beat benchmarks in periods when analysts began forecasting accounting items beyond operating EPS.

[TABLE 2 HERE]

2.5 RESEARCH DESIGN

To investigate the effect of analysts forecasting additional financial statement items on the market premium (penalty) for meeting/beating (missing) the operating EPS forecast, Equations 1 and 2 are enhanced to include the number of additional items forecasted by analysts along with five control variables that are also likely to affect the meet/beat (miss) premium (penalty). The impact of the number of forecasts beyond EPS on the *JustMeet* and *Beat* premium (Equation 3) and the *JustMiss* and *Miss* penalty (Equation 4) are estimated as follows:[11]

$$CAR_{it} = \beta_0 + \beta_1 UE\_EPS_{it} + \beta_2 JustMeet_{it} + \beta_3 Beat_{it} + \beta_4 NumForecast_{it} + \beta_5 NumForecast_{it} * UE\_EPS_{it} + \beta_6 NumForecast_{it} * JustMeet_{it} + \beta_7 NumForecast_{it} * Beat_{it} + \sum_{k=8}^{12} \beta_k Controls_{it} + \sum_{k=13}^{16} \beta_k [UE\_EPS_{it} * Controls_{it}] + \sum_{k=17}^{20} \beta_k [JustMeet_{it} * Controls_{it}] + \sum_{k=21}^{24} \beta_k [Beat_{it} * Controls_{it}] + \sum_{k=25}^{45} \beta_k Year_{it} + \sum_{k=46}^{84} \beta_k FF_{it} + \varepsilon_{it} \quad (3)$$

$$CAR_{it} = \alpha_0 + \beta_1 UE\_EPS_{it} + \alpha_2 JustMiss_{it} + \alpha_3 Miss_{it} + \alpha_4 NumForecast_{it} + \alpha_5 NumForecast_{it} * UE\_EPS_{it} + \alpha_6 NumForecast_{it} * JustMiss_{it} + \alpha_7 NumForecast_{it} * Miss_{it} + \sum_{k=8}^{12} \alpha_k Controls_{it} + \sum_{k=13}^{16} \alpha_k [UE\_EPS_{it} * Controls_{it}] + \sum_{k=17}^{20} \alpha_k [JustMiss_{it} * Controls_{it}] + \sum_{k=21}^{24} \alpha_k [Miss_{it} * Controls_{it}] + \sum_{k=25}^{45} \alpha_k Year_{it} + \sum_{k=46}^{84} \alpha_k FF_{it} + \delta_{it} \quad (4)$$

Where:

$$Controls = \{Scandal_{it} + Post_{it} + Size_{it} + BookMkt_{it} + EarnVol_{it} + AnalystFollow_{it}\} \quad (5)$$

This is the first study, to my knowledge that empirically examines the effects of multiple forecasts on the meet/beat market premium (penalty). The metric *NumForecast* is developed to capture the number of additional forecasted financial statement items beyond operating EPS that investors can use to evaluate firm performance. This variable is calculated as the product of the

[11] A detailed description of all variables is listed in Appendix A.

number of additional forecasted financial statement items (*Additional_Items*) and the focus analysts place on additional financial statement items (*FocusRatio*).

$$NumForecast_{it} = Additional\_Items_{it} * \left(\frac{TotalNumForecasts_{it} - NumEPSForecasts_{it}}{TotalNumForecasts_{it}} \right) \quad (6)$$

For example, for a firm with an operating EPS forecast, a cash flow from operations (CFO) forecast, and a GAAP EPS (GAP) forecast; *Additional_Items* would have a value of 2. Should the firm only receive an operating EPS forecast then *Additional_Items* is equal to 0. In order for a forecast to be counted in calculating *Additional_Items*, the actual value must be reported at the operating earnings (EPS) announcement date.[12] To control for instances where a minority of analysts forecast multiple financial statement items, while the majority of analysts only provide operating EPS forecasts, *Additional_Items* is multiplied by the *FocusRatio*. The *FocusRatio* is the percentage of total forecasts and forecast revisions that are not operating EPS forecasts or forecasts revisions.[13] The product of these two numbers, *NumForecast*, captures the number and impact of analysts forecasting multiple financial statement items.[14] *NumForecast* is interacted with the *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators to capture the effect of the variable on the meet/beat (miss) premium (penalty). The expectation is for negative (positive) coefficients on the *NumForecast*JustMeet (NumForecast*JustMiss*) and *NumForecast*Beat* (*NumForecast*Miss*) interactions. *NumForecast* is also interacted with unexpected earnings but no explicit prediction is made with regard to the sign on this interaction.

[12] In some instances, actuals for alternate accounting numbers are reported after the earnings announcement date. Since these actuals are announced in a period not captured in the CAR event window they are not counted in calculating *Additional_Items*.

[13] For example, assume a firm is followed by 20 analysts and 1 of the analyst forecasts five additional accounting numbers while the other 19 analysts only provide operating EPS forecasts. Suppose these 19 analysts make 60 forecasts / forecasts revisions for operating EPS and the single analyst does not provide any forecast revisions. In this case, *Additional_Items* is 5 but the overall focus analysts place on alternate accounting numbers (*FocusRatio*) is low (5 / 65). Multiplying *Additional_Items* by the *FocusRatio* provides a better proxy for the impact of multiple forecasted accounting numbers.

[14] In sensitivity analysis equations 3 and 4 are estimated using *Additional_Items* and *FocusRatio* individually as an alternate variable to *NumForecast*. The results are similar when these variables are used.

The model also controls for two temporal factors, *Scandal* and *Post*, and four cross-sectional factors: size, book-to-market ratio, earnings volatility, and analyst following.[15] These variables are likely to impact the premium (penalty) for meeting/beating (missing) analysts' operating EPS forecast and therefore, each is interacted with the *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators. Because these control variables are also likely to affect the pricing of unexpected earnings, they are each interacted with *UE_EPS*.

The temporal factor, *Scandal*, is included to control for other factors during the accounting scandal period that may have affected the meet/beat (miss) market premium (penalty). Consistent with Koh et al. (2008), the scandal period starts with the third quarter of 2001 and ends with the fourth quarter of 2004. The *Scandal* indicator is interacted with the meet/beat (Equation 3) and miss (Equation 4) indicator variables in order to capture investor skepticism towards earnings. If investors are skeptical of firms' earnings, they should decrease the reward for meeting/beating forecasted EPS. Correspondingly negative (positive) signs are expected on the interactions between *Scandal* and the *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators. A positive sign is also predicted on the interaction between *Scandal* and *UE_EPS* (Koh et al. 2008). The *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators and *UE_EPS* are also allowed to vary across the post scandal period (*Post*). The post-scandal period starts with the first quarter of 2005 and ends with the fourth quarter of 2007. No sign predications are made for these interactions.

[15] As a sensitivity check, I also included the level of a firm's discretionary accruals as a proxy for earnings quality. I expected the meet/beat signal to be negatively related to the level of discretionary accruals because investors may suspect that the EPS target was met through positive accrual manipulation. I utilized four different accrual estimation models to estimate discretionary accruals including the modified Jones model, the adjusted Jones model, the lagged Jones model and the forward-looking Jones (see Dechow et al. 2003 for a detailed description of the estimation models). All interactions between the meet/beat and miss indicators and discretionary accruals were insignificant. Perhaps investors that reward (penalize) firms that meet/beat (miss) EPS forecasts either lack the necessary sophistication or do not have enough information to assess earning quality at the earnings announcement date. The results presented in this paper are unaffected if accrual quality is included as an additional control variable.

The log of total assets is included as a measure of firm size (*Size*) which has been utilized by previous studies to proxy for the firm's information environment (Atiase 1985; Collins et al. 1987). Large firms have a richer information environment which diminishes the importance of the meet/beat (miss) signal and the pricing of unexpected earnings. Negative (positive) signs are expected on the interactions between *Size* and the *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators. A negative sign is also predicted on the interaction between *Size* and *UE_EPS* (Collins and Kothari 1989).

The firm's book-to-market ratio is also included as a measure of a firm's expected growth. Given that investors are more likely to have stronger expectations related to growth firms' earnings, the meet/beat signal should be more important for these firms. Negative (positive) signs are expected on the interactions between *BookMkt* and the *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators. Growth firms are also expected to have more persistent earnings and, therefore, a negative sign is predicted on the interaction between *BookMkt* and *UE_EPS* (Collins and Kothari 1989).

To control for earnings volatility, the twelve quarter rolling standard deviation in operating earnings (*EarnVol*) is included. It is expected that the meet/beat (miss) signal will be perceived as weaker for firms with more volatile earnings. Negative (positive) signs are expected on the interactions between *EarnVol* and the *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators. A negative sign is also predicted on the interaction between *EarnVol* and *UE_EPS*.

The number of analysts following a firm (*AnalystFollow*) is also included as a control variable because the meet/beat signal is likely to be stronger when more investors rely on analysts' forecasts as a performance benchmark. Given that analysts tend to follow firms where investors value the information they provide, *AnalystFollow* proxies for the value investors place

on analysts' information. Therefore, positive (negative) signs are expected on the interactions between *AnalystFollow* and the *JustMeet* (*JustMiss*) and *Beat* (*Miss*) indicators. A positive sign is also predicted on the interaction between *EarnVol* and *UE_EPS*.

Finally, indicator variables are included to control for year (*YEAR*) and industry fixed effects (*FF*). To summarize, Equation 3 and 4 provide an estimation of the effect of analysts forecasting additional financial statement items (*NumForecast*) on investors rewarding (penalizing) behavior with respect to meeting/beating (missing) the operating EPS forecast.

2.6 SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Analysts' forecasts and actual earnings data are obtained from Thomson Financials split-unadjusted I/B/E/S table for the period 1987 to 2007 in order to estimate Equations 3 and 4. [16] Other required forecasted financial statement items are obtained from the I/B/E/S detail history table. Stock returns and price data, necessary to calculate the dependent variable, are obtained from Center for Research in Security Prices (CRSP) using EVENTUS. The CAR window is restricted to be no less than 20 days and no more than 100 days.[17] Finally, all accounting data is gathered from the COMPUSTAT XPRESSFEED quarterly table. The intersection of these tables yields a final sample of 101,748 firm-quarter observations. A detailed breakdown of the sample selection process is displayed in Table 3.

[TABLE 3 HERE]

[16] Payne and Thomas (2002) show that the split-unadjusted IBES table is utilized because not all prior forecasts and earnings per share amounts divide precisely to a penny, rounding in the adjusted EPS table can create misclassification problems.

[17] The 20 day requirement is made to ensure that the firm has some sort of analyst following throughout the accounting period. The 100 day requirement is used to control for late earnings announcements. The return window should be no more than 90 days for a timely earnings announcement. I include earnings announcements announced up to 10 days late. All inferences are the same if the restrictions are eliminated.

Descriptive statistics are given in Table 4 where Panel A provides statistics for the sample related to the dependent variable cumulated abnormal returns (CAR). As previously discussed in Section 3, the return window varies across firms depending on the timing of the first operating EPS forecast for the quarter. The average return window is approximately 71 days. Panel B provides descriptive statistics related to firms followed by analysts with data available in IBES. The sample firms receive on average a higher number of additional forecasts (*NumForecast* 1.5061 compared to 1.1997) and have a higher analyst following (*AnalystFollow* 6.4301 compared to 5.75) than the IBES population. With respect to other model variables, the sample closely matches the IBES population. Panel C compares the sample to the COMPUSTAT population. The sample consists of firms that are larger (mean *Size* of 6.9271 vs. 4.77), with higher growth (mean *BookMkt* 0.0159 vs. 0.0710) and less volatile earnings (mean *EarnVol* 0.0209 vs. 0.1151) than the average firm in COMPUSTAT which is typical of firms with an analyst following (Bhushan 1989; Bricker et al. 1995).

[TABLE 4 HERE]

2.7 RESULTS

2.7.1 Primary Result

Two multivariate models are utilized to investigate the effect of multiple forecasted items on the meet/beat (miss) market premium (penalty). Equations 3 and 4 are estimated using ordinary least squares, and to control for heteroscedasticity, p-values are reported using robust standard errors (White 1980).

Results are presented in Table 5 and provide support for the argument that forecasts of additional financial statement items diminishes the meet/beat (miss) market premium (penalty). The coefficients on both the *NumForecast*JustMeet* and *NumForecast*Beat* interactions are negative and significant (p =. 0045 and p = .0313 respectively). The results for missing expectations show the *NumForecast*JustMiss* interaction is not significant (p = .1761) while the coefficient on the *NumForecast*Miss* interaction is negative and significant (p = .0012). The Scandal interactions all follow their predicted signs but are only significant (at $p < .05$) for the *Scandal*Beat* and *Scandal*Miss* interactions. The *Scandal* indicator variable captures investor skepticism during the period after the accounting scandals. The results are consistent with investor skepticism reducing the beat (miss) premium (penalty), but the results are not as strong as presented in Koh et al. (2008). The results are consistent with both additional forecasts and investor skepticism contributing to the decline in the meet/beat (miss) market premium (penalty).

The results also provide some insight into prior findings that ERCs increased during the scandal period (Koh et al. 2008). It is difficult to reconcile this finding during a period when investor skepticism increased. The results suggest that this increase is at least partially due to analyst forecasting additional financial statement items during this period. In both models, the coefficient on the *NumForecat*UE_EPS* interaction is positive and significant which is consistent with ERCs being higher for firms with many financial statement items forecasted. The coefficient on the *Scandal*UE_EPS* interaction is insignificant in both models. All other variables in the models follow their predicted signs or are not significantly different from zero

To provide some insight into the economic significance of the *NumForecast* coefficients, equation 3 (4) is used to estimate the market premium (penalty) for just meeting and beating (just missing and missing) analysts' EPS forecasts over time. For each quarter from 1989 to 2007, a

market premium (penalty) is estimated by inserting the variable means for each *JustMeet* and *Beat* (*JustMiss* and *Miss*) firm into equation 3 (4). The estimated premiums (penalties) are graphed over time in Figure 2. The graphs show the estimated premiums (penalties) with and without the impact of *NumForecast*. Panel A graphs the estimated *JustMeet* market premium. The *NumForecast* variable has a strong effect on the *JustMeet* market premium; explaining nearly fifty percent of the decline during the 2001 to 2004 period. The model predicts the return of the JustMeet premium in 2005; however, analysts' forecast of additional financial statement items continues to impact the premium holding it below its pre-2001 level. Panel B graphs the estimated *Beat* market premium.[18]

The finding that the *NumForecast* variable has the strongest impact on the decline of the *JustMeet* market premium is partially explained by the distribution of NumForecast across *JustMeet*, *Beat*, *JustMiss*, and *Miss* firms. Untabulated results show that analysts forecast significantly more financial statement items, beyond EPS, for JustMeet firms than firms in the other groups. *Miss* firms have the lowest number of additional financial statement items forecasted. This distribution is likely a result of the high correlation between NumForecast and analyst following (*AnalystFollow*).[19] Managers appear to be more concerned with meeting analysts' expectations when many analysts are following the firm.

[TABLE 5 HERE]

[18]Untabulated graphs of the estimated *JustMiss* and *Miss* market penalties do not predict as severe of a decline in the JustMiss and Miss market penalties during the 2001 to 2004 period. Further, *NumForecast* has a much smaller impact on the decline of these market penalties.

[19] Untabulated correlation coefficients between NumForecast and AnalystFollow are .32 Pearson and .30 Spearman.

2.7.2 Sensitivity Tests

I conduct several sensitivity tests to validate the robustness of our results. First, there is a possible econometric problem in starting the CAR window on the day of the first forecast of the period and then basing the meet / beat indicators on the last forecast of the period. As a sensitivity check, I estimate equations 3 and 4 using two alternative model specifications: 1) adjusting the CAR window to start on the day of the last analyst's EPS forecast and end the day after the earnings announcement; 2) setting the meet/beat indicators so that the expectation is based on the first forecast of the period. Untabulated results are qualitatively similar under both model specifications.

Second, in an effort to make the results easier to interpret, equations 3 and 4 are estimated separately to show the market premium (penalty) relative to firms that just miss and miss (just meet and beat) analysts' EPS expectations. Koh et al. (2008) also utilized this approach. However, estimating the premium (Equation 3) and penalty (Equation 4) models separately creates a possible correlated omitted variables problem given that in equation 3 (4) the just miss (just meet) indicator is missing. As a sensitivity check, I estimate one model, eliminating only the miss indicator variable. Untabulated results are qualitatively similar under this model specification.[20]

Overall, the results are consistent with the conjecture that additional forecasted financial statement items significantly contributed to the decline in the meet/beat (miss) market premium (penalty) during the period directly following the accounting scandals. This finding is important

[20] I estimate this model three separate ways: 1) setting the CAR window and just miss, just meet, and beat indicators as described in Section 3 of the paper; 2) starting the CAR window on the day of the last analyst's EPS forecast and ending the day after the earnings announcement; 3) basing the just miss, just meet, and beat indicators on the first forecast of the period. Untabulated results are qualitatively similar under all three model specifications.

because it provides empirical evidence consistent with the conjecture that the scandals did not reduce investor confidence in earnings as much as previously believed.

2.8 CONCLUSION

This research provides evidence consistent with an alternate explanation for the diminished market premium awarded to firms that meet/beat their EPS forecast. After the accounting scandals of the 2001 – 2002 period, the market premium for meeting or just beating (beating by one penny or less) forecasted EPS completely disappeared, and the premium for beating forecasted EPS by more than a penny diminished. Koh et al. (2008) suggest that the decline in the market premium is due to increased investor skepticism of earnings following the accounting scandals. Their results imply investors lost confidence in the quality of accounting information. I pose an alternative explanation regarding the causes of the reduced meet/beat premiums and also look further into the persistence of the phenomenon documented in Koh et al. (2008).

The results presented in this study provide evidence that the increase in the number of financial statement items forecasted contributed to the diminished meet/beat (miss) EPS market premium (penalty). These results are consistent with the interpretation that the accounting scandals did not result in a complete lack of investor confidence in accounting earnings. Importantly, this paper documents that investor skepticism towards meet/beat firms was only a temporary phenomenon and investors have resumed rewarding (penalizing) firms that meet/beat (miss) analysts' earnings expectations. The increase in the number of financial statement items forecasted that continue to be forecast provides an additional explanation regarding why the meet/beat (miss) premium (penalty) has not returned to its historical average. These findings

should be of interest to those studying the meet/beat phenomenon and investors relying on analysts' forecasts, as well as to managers interested in how investors evaluate performance.

2.9 APPENDIX A

Variable Definitions

CAR	firm i's cumulative market-adjusted (value-weighted) return over the period beginning two days after the first forecast (F_{first}) of the period and ending one day after the firm announces earnings. F_{first} is defined as the first forecast of the period starting at least three days subsequent to the previous period's earnings announcement
UE_EPS	firm i's unexpected earnings scaled by stock price at the beginning of the quarter defined as $(EPS_{iq} - F_{first}) / P_{q-1}$ where EPS_{iq} is the firm's actual earnings and P_{q-1} is the stock price at the beginning of the quarter
JustMeet	is one if the firm meets or beats the last forecast of the period (F_{last}) by no more than 1 cent ($0 \leq EPS_{iq} - F_{last} \leq .01$)
Beat	is one if the firm beats expectations by more than 1 cent ($EPS_{iq} - F_{last} > .01$)
JustMiss	is one if the firm misses the last forecast of the period (F_{last}) by no more than 1 cent ($-.01 \leq EPS_{iq} - F_{last} < 0$)
Miss	is one if the firm misses expectations by more than 1 cent ($EPS_{iq} - F_{last} < -.01$)
NumForecast	is the number of additional financial statement items forecasted * *FocusRatio*. Where *FocusRatio* is (Total Number of Forecasts – Total Number of EPS Forecasts) / Total Number of Forecasts
Scandal	is 1 for firm / quarter observations from the third quarter of 2001 through the fourth quarter of 2002 (scandal period); 0 otherwise
Size	is defined as the log of total assets
BookMkt	is the log (book value of equity) / market value of equity
EarnVol	is the twelve quarter standard deviation in earnings before extraordinary items per share scaled by the stock price at the beginning of the quarter
AnalystFollow	is the number of analyst following the firm during the quarter

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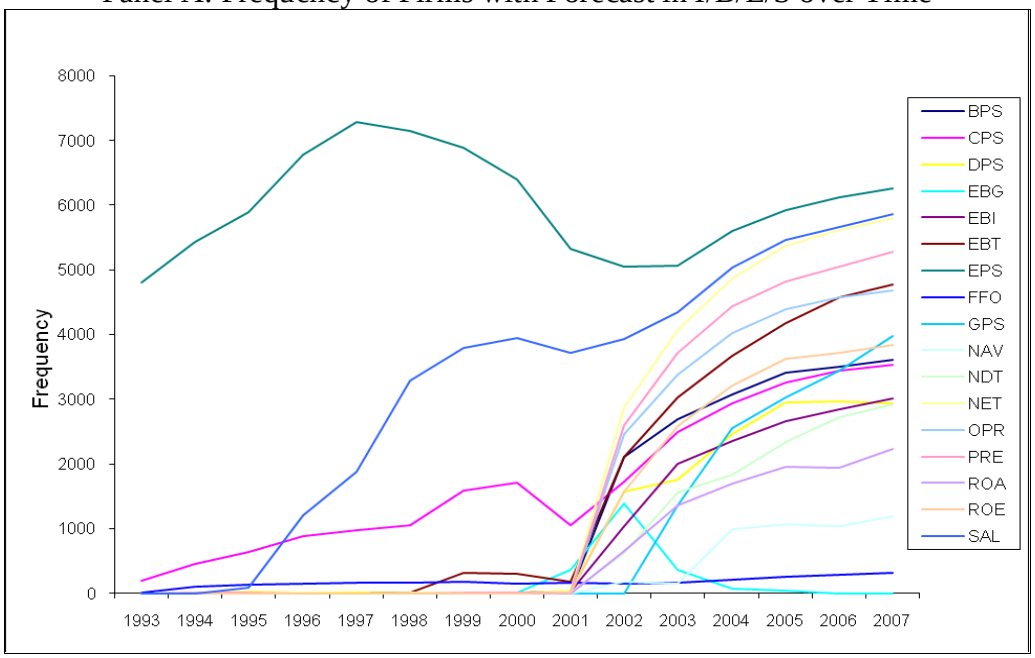
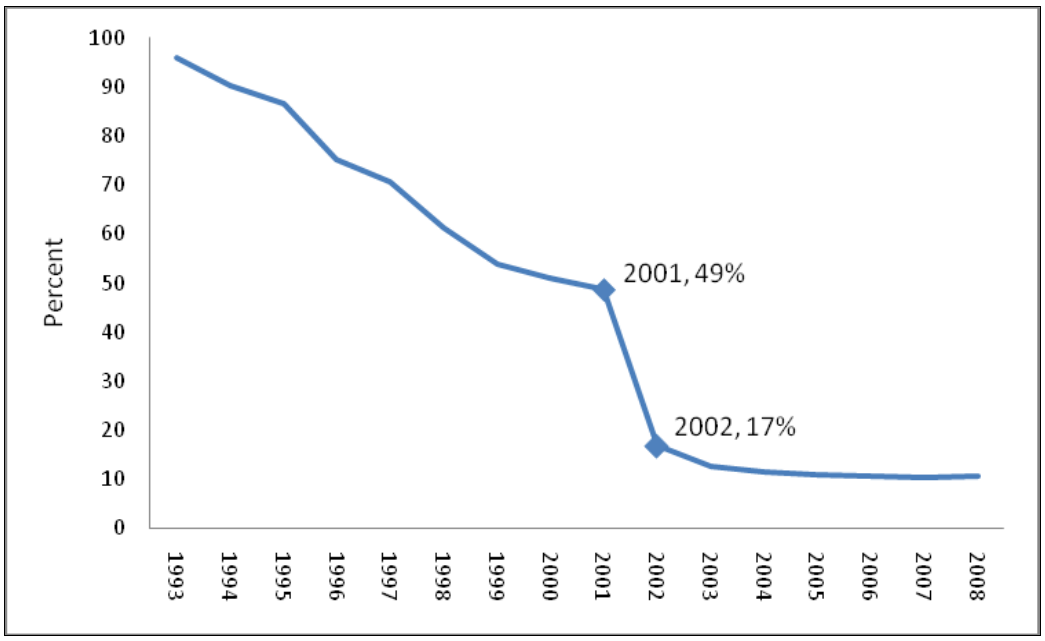
Figure 1

Panel A: Frequency of Firms with Forecast in I/B/E/S over Time



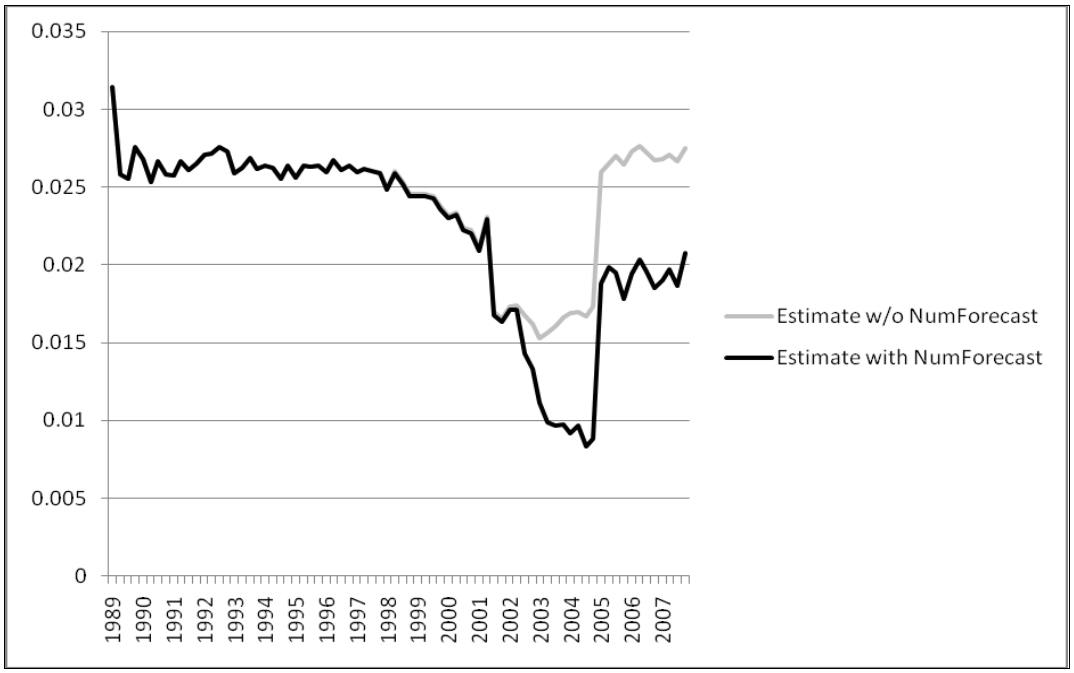
Panel B: EPS as a Percent of Total Forecasts over Time



Notes: Sample contains all firm / quarter observations with data available on the I/B/E/S detail table from 1993 to 2008. **BPS** is book value per share. **CPS** is cash flow from operations per share. **DPS** is dividends per share. **EGB** is earnings before goodwill per share. **EBI** is earnings before interest per share. **EBT** is earnings before tax per share. **EPS** is operating earnings per share. **FFO** is funds from operations per share. **GAP** is GAAP earnings per share. **NAV** is net asset value. **NDT** is net debt value. **NET** is net income. **OPR** is operating profit. **PRE** is profit before taxes. **ROA** is return on assets. **ROE** is return on equity. **SAL** is sales

Figure 2
Interpreting the Impact of Multiple Forecasted Items (NumForecast)

Panel A: Multivariate predictions of JustMeet market premium over time (Estimated using Equation 3)



Panel B: Multivariate predictions of Beat market premium over time (Estimated using Equation 3)

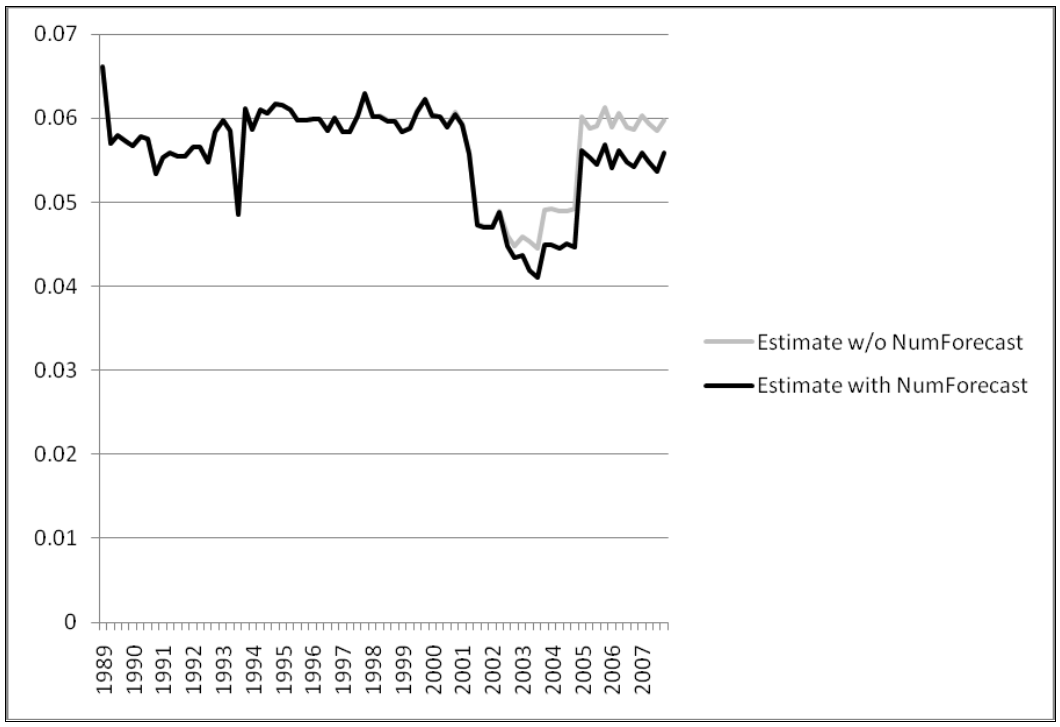


Table 1

Market Premium (Penalty) for Meeting / Beating (Missing) Analysts' EPS Expectations Over Time

Panel A: Meeting/Beating Expectations

$$CAR_{iq} = \beta_0 + \beta_1 UE\_EPS_{iq} + \beta_2 JustMeet_{iq} + \beta_3 Beat_{iq} + \lambda_{iq}$$

Panel B: Missing Expectations

$$CAR_{iq} = \alpha_0 + \alpha_1 UE\_EPS_{iq} + \alpha_2 JustMiss_{iq} + \alpha_3 Miss_{iq} + \delta_{iq}$$

Year	n	β_1	p-value	β_2	p-value	Year	n	α_1	p-value	α_2	p-value
1987	3399	0.0202	0.0051	0.0571	0.0000	1987	3399	-0.0341	0.0003	-0.0511	0.0000
1988	4250	0.0227	0.0002	0.0374	0.0000	1988	4250	-0.0189	0.0086	-0.0361	0.0000
1989	5586	0.0269	0.0000	0.0370	0.0000	1989	5586	-0.0134	0.0251	-0.0388	0.0000
1990	6139	0.0538	0.0000	0.0578	0.0000	1990	6139	-0.0211	0.0060	-0.0647	0.0000
1991	6591	0.0447	0.0000	0.0688	0.0000	1991	6591	-0.0380	0.0000	-0.0664	0.0000
1992	7034	0.0241	0.0000	0.0601	0.0000	1992	7034	-0.0476	0.0000	-0.0463	0.0000
1993	6819	0.0310	0.0000	0.0731	0.0000	1993	6819	-0.0451	0.0000	-0.0587	0.0000
1994	9391	0.0221	0.0000	0.0484	0.0000	1994	9391	-0.0453	0.0000	-0.0341	0.0000
1995	9774	0.0285	0.0000	0.0628	0.0000	1995	9774	-0.0464	0.0000	-0.0481	0.0000
1996	10385	0.0256	0.0000	0.0655	0.0000	1996	10385	-0.0369	0.0000	-0.0518	0.0000
1997	10868	0.0390	0.0000	0.0735	0.0000	1997	10868	-0.0424	0.0000	-0.0634	0.0000
1998	10785	0.0350	0.0000	0.0833	0.0000	1998	10785	-0.0569	0.0000	-0.0596	0.0000
1999	9945	0.0034	0.3346	0.0775	0.0000	1999	9945	-0.0439	0.0003	-0.0399	0.0000
2000	7561	0.0466	0.0000	0.0583	0.0000	2000	7561	-0.0316	0.0096	-0.0619	0.0000
2001	8192	0.0178	0.0105	0.0413	0.0000	2001	8192	-0.0380	0.0001	-0.0283	0.0004
2002	8158	0.0081	0.1462	0.0637	0.0000	2002	8158	-0.0291	0.0019	-0.0409	0.0000
2003	8030	0.0069	0.0900	0.0422	0.0000	2003	8030	-0.0305	0.0000	-0.0250	0.0000
2004	8607	0.0027	0.2773	0.0398	0.0000	2004	8607	-0.0347	0.0000	-0.0204	0.0000
2005	8719	0.0144	0.0006	0.0520	0.0000	2005	8719	-0.0368	0.0000	-0.0378	0.0000
2006	9006	0.0188	0.0000	0.0540	0.0000	2006	9006	-0.0311	0.0000	-0.0449	0.0000
2007	9670	0.0228	0.0000	0.0619	0.0000	2007	9670	-0.0457	0.0000	-0.0504	0.0000

All p-values based on one tailed t-test using robust standard errors (White 1980).

CAR_{iq} is firm i's cumulative market-adjusted (value-weighted) return over the period beginning two days after the first forecast (F_{first}) of the period and ending one day after the firm announces earnings. F_{first} is defined as the first forecast of the period starting at least three days subsequent to the previous period's earnings announcement. **UE_EPS_{iq}** is firm i's unexpected earnings scaled by stock price at the beginning of the quarter defined as $(EPS_{iq} - F_{first}) / P_{q-1}$ where EPS_{iq} is the firm's actual earnings and P_{q-1} is the stock price at the beginning of the quarter. **$JustMeet_{iq}$** is is one if the firm meets or beats the last forecast of the period (F_{last}) by no more than 1 cent ($0 \leq EPS_{iq} - F_{last} \leq .01$). **$Beat_{iq}$** is one if the firm beats expectations by more than 1 cent ($EPS_{iq} - F_{last} > .01$). **$JustMiss_{iq}$** is one if the firm misses the last forecast of the period (F_{last}) by no more than 1 cent ($-.01 \leq EPS_{iq} - F_{last} < 0$). **$Miss_{iq}$** is one if the firm misses expectations by more than 1 cent ($EPS_{iq} - F_{last} < -.01$).

Table 2

Percent of I/B/E/S Firms with Additional Financial statement items Forecasted by Year

Year	Additional_Items														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
1993	99.98	0.02	0	0	0	0	0	0	0	0	0	0	0	0	100
1994	99.86	0.14	0	0	0	0	0	0	0	0	0	0	0	0	100
1995	99.87	0.13	0	0	0	0	0	0	0	0	0	0	0	0	100
1996	97.3	2.68	0.02	0	0	0	0	0	0	0	0	0	0	0	100
1997	94.15	5.84	0.01	0	0	0	0	0	0	0	0	0	0	0	100
1998	71.11	28.83	0.06	0	0	0	0	0	0	0	0	0	0	0	100
1999	65.36	33.25	1.34	0.05	0	0	0	0	0	0	0	0	0	0	100
2000	61.66	35.4	2.63	0.31	0	0	0	0	0	0	0	0	0	0	100
2001	59.49	38.69	1.74	0.08	0	0	0	0	0	0	0	0	0	0	100
2002	31.36	29.85	12.07	6.85	8.55	5.56	2.94	1.79	0.84	0.12	0.06	0.01	0	0	100
2003	26.85	5.83	2.39	3.72	13.24	13.52	11.16	8.27	7	4.72	2	0.95	0.31	0.03	100
2004	25.43	2.53	1.26	2.07	10.06	13.66	12.61	9.94	7.52	5.27	4.66	3.37	1.4	0.22	100
2005	32.63	2.26	1.16	1.76	8.86	11.28	11.01	9.53	6.84	5.35	3.92	3.15	1.87	0.38	100
2006	32.39	2.4	1.16	1.58	6.49	12.07	11.55	9.55	6.76	4.78	4.13	4.61	2.1	0.44	100
2007	35.69	1.89	1.07	1.15	5.46	10.42	11.78	9.79	7.13	5.24	3.48	4.43	2.22	0.25	100
Total	69.41	9.3	1.17	0.84	2.6	3.65	3.54	2.92	2.13	1.49	1.08	1.11	0.61	0.14	100

Additional_Items is the number of additional items forecasted for firm i beyond EPS. For example, if a firm had an operating EPS forecast, a cash flow from operations (CFO) forecast, and a GAAP EPS (GAP) forecast *NumForecast* would have a value of 2. If *NumForecast* is equal to 0 the firm only received an operating EPS forecast.

Table 3

Sample Selection Process

IBES Quarterly Earnings Observations		194,075
Less Observations without EPS Actual Data Available on IBES	(2,848)	
Less Observations without Return Data and Price Data on CRSP	(1,372)	
Less Observations with Return Windows < 20 Days	(8,018)	
Less Observations with Return Windows > 100 Days	(12,928)	
Less Observations with missing COMPUSTAT Data	(67,161)	
Final Sample		101,748

Notes: Sample contains all firm / quarter observations with data available on I/B/E/S and COMPUSTAT from 1987 to 2007.

Table 4

Descriptive Statistics

Panel A: Sample CAR, n = 101,748

Variable	Mean	Std Dev	Min	25th	Median	75th	Max
CAR	0.0086	0.1837	-2.1121	-0.0800	0.0085	0.0983	2.0701
Return Window	71.3357	18.9749	20	60	78	85	100

Panel B: Comparison to IBES Population

	IBES Pop.	Sample, n = 101,748						
Variable	Mean	Mean	Std Dev	Min	25th	Median	75th	Max
UE_EPS	-0.0018	-0.0014	0.0112	-0.0923	-0.0019	0.0000	0.0016	0.0326
JustMeet	0.2555	0.2625	0.4400	0	0	0	1	1
Beat	0.4127	0.4183	0.4933	0	0	0	1	1
JustMiss	0.0738	0.0771	0.2667	0	0	0	0	1
Miss	0.2588	0.2429	0.2667	0	0	0	0	1
NumForecast	0.8397	1.1030	2.1927	0.0000	0.0000	0.0000	0.4000	13.0200
AnalystFollow	5.7500	6.4303	5.3927	1.0000	2.0000	5.0000	9.0000	43.0000

Panel C: Comparison to COMPUSTAT Population

	COMPUSTAT Pop.	Sample, n = 101,748						
Variable	Mean	Mean	Std Dev	Min	25th	Median	75th	Max
Size	4.7700	6.9271	1.9068	0.4656	5.5612	6.8231	8.1712	14.6734
BookMkt	0.0710	0.0159	0.0234	0.0001	0.0025	0.0072	0.0187	0.1465
EarnVol	0.1151	0.0209	0.0389	0.0012	0.0043	0.0086	0.0197	0.2956

Notes: The IBES population consists of 170,105 observations. The COMPUSTAT populations consists of 827,768 observations for calculating *Size*, 643,214 observations for calculating *BookMkt*, and 463,278 observations for calculating *EarnVol*. Sample contains all firm / quarter observations with data available on I/B/E/S and COMPUSTAT from 1987 to 2007.

CAR is firm i's cumulative market-adjusted (value-weighted) return over the period beginning two days after the first forecast (F_{first}) of the period and ending one day after the firm announces earnings. F_{first} is defined as the first forecast of the period starting at least three days subsequent to the previous period's earnings announcement. **UE_EPS** is firm i's unexpected earnings scaled by stock price at the beginning of the quarter defined as $(EPS_{iq} - F_{first}) / P_{q-1}$ where EPS_{iq} is the firm's actual earnings and P_{q-1} is the stock price at the beginning of the quarter. **JustMeet** is is one if the firm meets or beats the last forecast of the period (F_{last}) by no more than 1 cent ($0 \leq EPS_{iq} - F_{last} \leq .01$). **Beat** is one if the firm beats expectations by more than 1 cent ($EPS_{iq} - F_{last} > .01$). **JustMiss** is one if the firm misses the last forecast of the period (F_{last}) by no more than 1 cent ($-.01 \leq EPS_{iq} - F_{last} < 0$). **Miss** is one if the firm misses expectations by more than 1 cent ($EPS_{iq} - F_{last} <- .01$). **NumForecast** is the number of additional financial statement items forecasted * FocusRatio. **AnalystFollow** is the number of analyst following the firm during the quarter. **Size** is defined as the log of total assets. **BookMkt** is the log (book value of equity) / market value of equity. **EarnVol** is the twelve quarter standard deviation in earnings before extraordinary items per share scaled by the stock price at the beginning of the quarter.

Table 5
Multivariate Analysis

$$CAR_{it} = \beta_0 + \beta_1 UE\_EPS_{it} + \beta_2 JustMeet_{it} + \beta_3 Beat_{it} + \beta_4 NumForecast_{it} + \beta_5 NumForecast_{it} * UE\_EPS_{it}$$
$$+ \beta_6 NumForecast_{it} * JustMeet_{it} + \beta_7 NumForecast_{it} * Beat_{it} + \sum_{k=8}^{12} \beta_k Controls_{it} + \sum_{k=13}^{16} \beta_k [UE\_EPS_{it} * Contorls_{it}]$$
$$+ \sum_{k=17}^{20} \beta_k [JustMeet_{it} * Controls_{it}] + \sum_{k=21}^{24} \beta_k [Beat_{it} * Controls_{it}] + \sum_{k=25}^{45} \beta_k Year_{it} + \sum_{k=46}^{84} \beta_k FF_{it} + \varepsilon_{it}$$

Panel A: Meeting / Beating Expectations, n = 101,748				Panel B: Missing Expectations, n = 101,748			
Variable	Pred. Sign	Coefficient	P-Value	Variable	Pred. Sign	Coefficient	P-Value
Intercept	**?**	0.0094	0.2097	Intercept	?	0.1274	0.0000
UE_EPS	+	4.5282	0.0000	UE_EPS	+	5.1106	0.0000
JustMeet	+	0.0604	0.0000	JustMiss	-	-0.1018	0.0000
Beat	+	0.1641	0.0000	Miss	-	-0.1205	0.0000
NumForecast	?	0.0010	0.0871	NumForecast	?	-0.0012	0.0008
Scandal	?	-0.0552	0.0000	Scandal	?	-0.0642	0.0000
Post	**?**	-0.0581	0.0000	Post	?	-0.0544	0.0000
Size	?	0.0033	0.0002	Size	?	-0.0075	0.0000
BookMkt	?	-0.0789	0.2855	BookMkt	?	-0.4811	0.0000
EarnVol	?	0.1330	0.0021	EarnVol	?	0.1049	0.0002
AnalystFollow	?	-0.0019	0.0000	AnalystFollow	?	-0.0004	0.0176
NumForecast*UE_EPS	?	0.2747	0.0015	NumForecast*UE_EPS	?	0.3171	0.0004
Scandal*UE_EPS	+	0.0501	0.4325	Scandal*UE_EPS	+	0.0937	0.3769
Post*UE_EPS	**?**	-1.2892	0.0000	Post*UE_EPS	?	-1.3661	0.0000
Size*UE_EPS	-	-0.3459	0.0000	Size*UE_EPS	-	-0.4071	0.0000
BookMkt*UE_EPS	-	-10.6742	0.0004	BookMkt*UE_EPS	-	-13.7531	0.0000
EarnVol*UE_EPS	-	0.1293	0.4685	EarnVol*UE_EPS	-	0.5416	0.3733
AnalystFollow*UE_EPS	+	0.2373	0.0000	AnalystFollow*UE_EPS	+	0.2520	0.0000
NumForecast*JustMeet	**-**	**-0.0020**	**0.0045**	**NumForecast*JustMiss**	**+**	**0.0009**	**0.1761**
Scandal*JustMeet	-	-0.0061	0.0839	Scandal*JustMiss	+	0.0036	0.2605
Post*JustMeet	**?**	0.0027	0.5273	Post*JustMiss	?	0.0020	0.7280
Size*JustMeet	-	-0.0047	0.0000	Size*JustMiss	+	0.0099	0.0000
BookMkt*JustMeet	-	-0.1585	0.0755	BookMkt*JustMiss	+	0.5921	0.0001
EarnVol*JustMeet	-	-0.1337	0.0171	EarnVol*JustMiss	+	-0.1297	0.0627
AnalystFollow*JustMeet	+	0.0002	0.3398	AnalystFollow*JustMiss	-	-0.0016	0.0005
NumForecast*Beat	**-**	**-0.0014**	**0.0313**	**NumForecast*Miss**	**+**	**0.0025**	**0.0012**
Scandal*Beat	-	-0.0103	0.0077	Scandal*Miss	+	0.0112	0.0077
Post*Beat	**?**	0.0006	0.8794	Post*Miss	?	-0.0060	0.1446
Size*Beat	-	-0.0160	0.0000	Size*Miss	+	0.0109	0.0000
BookMkt*Beat	-	-0.5941	0.0000	BookMkt*Miss	+	0.3705	0.0002
EarnVol*Beat	-	-0.0058	0.4602	EarnVol*Miss	+	0.0923	0.0653
AnalystFollow*Beat	+	0.0024	0.0000	AnalystFollow*Miss	-	-0.0014	0.0000
R^2		0.0893		R^2		0.0823	

P-values based on one-tailed t-tests where signs are predicted and two-tailed t-tests where no sign prediction is made. All p-values calculated using robust standard errors (White 1980).

CAR is firm i's cumulative market-adjusted (value-weighted) return over the period beginning two days after the first forecast (F_{first}) of the period and ending one day after the firm announces earnings. F_{first} is defined as the first forecast of the period starting at least three days subsequent to the previous period's earnings announcement. **UE_EPS** is firm i's unexpected earnings scaled by stock price at the beginning of the quarter defined as ($EPS_{iq} - F_{first}$) / P_{q-1} where EPS_{iq} is the firm's actual earnings and P_{q-1} is the stock price at the beginning of the quarter. **JustMeet**$_i$ is one if the firm meets or beats the last forecast of the period (F_{last}) by no more than 1 cent ($0 \leq EPS_{iq} - F_{last} \leq .01$). **Beat** is one if the firm beats expectations by more than 1 cent ($EPS_{iq} - F_{last} > .01$). **JustMiss** is one if the firm misses the last forecast of the period (F_{last}) by no more than 1 cent ($-.01 \leq EPS_{iq} - F_{last} < 0$). **Miss** is one if the firm misses expectations by more than 1 cent ($EPS_{iq} - F_{last} < -.01$). **NumForecast** is the number of additional financial statement items forecasted * FocusRatio . **Scandal** is 1 for firm / quarter observations from the third quarter of 2001 through the fourth quarter of 2002 (scandal period); 0 otherwise. **Size** is defined as the log of total assets. **BookMkt** is the log (book value of equity) / market value of equity. **EarnVol** is the twelve quarter standard deviation in earnings before extraordinary items per share scaled by the stock price at the beginning of the quarter. **AnalystFollow** is the number of analyst following the firm during the quarter.

3. THE IMPACT OF MEETING OR BEATING ANALYSTS' CASH FLOW FORECASTS ON A FIRM'S COST OF DEBT

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3. 1. INTRODUCTION

The demand for detailed cash flow information and cash flow forecasts increased substantially following the accounting scandals identified in the early 2000's.[21] These scandals eroded investor confidence in the capital markets and made it clear that earnings do not always predict future firm performance consistently and/or reliably (Jain and Rezaee 2006). Under certain economic circumstances, firms have incentives to use the inherent flexibility in generally accepted accounting principles to help present a favorable earnings position. Cash flow information is arguably more concrete and less susceptible to artificial manipulations than "pro-forma" or actual reported accounting earnings. Contemporaneous with these scandals and the passage of the Sarbanes-Oxley Act of 2002 there was a corresponding increase in the supply of analysts' cash flow forecasts.[22] Our research investigates the importance and impact of meeting or beating these forecasts on a firm's cost of debt.

Specifically, we empirically examine the effect of meeting or beating cash flow[23] forecasts on three important measures of the firm's borrowing costs. First, we examine the effects of meeting/beating cash flow benchmarks on initial bond ratings. Bond ratings are assigned by a team of rating analysts before a new issue is sent to market and serve as an important indicator of a firm's default risk. Higher ratings typically translate into lower bond

[21] Examples of major accounting scandals during this period include Enron, WorldCom, Adelphia, HealthSouth, McKesson, Tyco, and Qwest.
[22] Figure 1 shows the percentage of firms on I/B/E/S receiving a cash flow from operations forecast over time. As the figure indicates, the supply of cash flow information increased fairly steadily from 1993 to 2000 until a sudden dip occurred in 2001. Following 2001, the number of firms receiving cash flow forecasts increased very dramatically from twenty percent in 2001 to forty-nine percent in 2003. The number of cash flow forecasts continued to increase steadily up to fifty-eight percent in 2007.
[23] In all instances cash flow refers to cash flow from operations.

yields. Second, we directly investigate yield effects related to meeting/beating cash flow forecasts by examining the marketplace pricing of a firm's new debt issuance. Third, we investigate the effect of meeting/beating cash flow forecasts on the probability of receiving a bond rating upgrade or downgrade. As we undertake each of these analyses, we also conduct a direct comparison regarding the importance of meeting/beating analysts' *cash flow* forecasts compared to meeting/beating analysts' *earnings* forecasts.

Investigating the effects of meeting or beating analysts' cash flow forecasts in debt markets is important for several reasons. Most importantly, the economic claims of bondholders are fundamentally different from those of shareholders. Equity investors represent the residual owners of a firm whose incentives are aligned with the firm and their returns are limited only by the firm's opportunities and management's motivations (Jensen and Meckling 1976). Given their position, shareholders are greatly concerned with a firm's earnings which provide a signal regarding whether their return expectations are likely to be met and place secondary importance on operating cash flow and solvency (Ettredge and Fuller 1991; Hayn 1995). Unlike shareholders, bondholders possess a fixed claim against the firm's assets. They bear downside risks but do not fully share in the firm's future profits (Fischer and Verrecchia 1997; Plummer and Tse 1999). Therefore, it is unclear whether bondholders are more interested in indicators of liquidity and solvency (i.e. cash flow forecasts) or indicators of firm performance (i.e. earnings forecasts). Our research empirically explores these issues by examining three important debt related events that are individually initiated or determined by separate debt market segments, i.e. initial bond rating, bond yield, and subsequent bond rating changes.

Debt markets are also important to investigate because they serve as the primary source of new capital for many firms. New corporate debt issues underwritten in the U.S. average

$1,136 billion each year compared to an average of $142 billion from equity issues.[24] Consequently, managers committed to lowering a firm's cost of capital are particularly interested in understanding the type of general benchmarks rating agencies and debt investors utilize to evaluate firm risk and performance. In addition, the assigned credit ratings supplied by the large rating agencies[25] play an important role in our capital market system. Firms with higher bond ratings typically receive better financing terms (i.e. lower yields), which can substantially lower the firm's cost of capital. A more detailed empirical understanding of how bond investors and rating agencies actually utilize accounting information can be helpful to managers as they plan future debt issuances.

Results based on our analyses of initial bond ratings confirm our expectations that meeting or beating analysts' cash flow forecasts has positive implications for a firm's cost of debt, as we find evidence that firms achieving this benchmark have higher initial bond ratings. Results based on our analyses of bond pricing indicate that firms meeting/beating cash flow forecasts, *ceteris paribus*, have lower bond yields with approximately a 25 basis points differential. With respect to our third cost of debt metric, bond rating changes, we find evidence that firms meeting or beating cash flow forecasts have a higher probability of a rating upgrade while firms missing the benchmark have a higher probability of a rating downgrade. Further, for firms missing the benchmark, the probability of a downgrade is approximately twice as large as the probability of an upgrade for firms achieving the benchmark. This asymmetric reaction is consistent with Easton et al.'s (2009) finding that bonds are far more sensitive to bad news than good news. Finally, based upon additional analyses, although we establish that both the cash flow and the earnings benchmarks each provide incremental information to debt market

[24] Based on 1990–2006 underwriting data, reported by the Securities Industry and Financial Markets Association (http://www.sifma.org/news/ faqs.html).
[25] The largest and most dominant rating agencies are Moody's, Standard & Poor's, and Fitch.

participants, we are unable to clearly document that one is statistically more important than the other with respect to a firm's cost of debt. Furthermore, in contrast to some research in the equity markets (Givoly et al. 2009) questioning the importance and accuracy of cash flow forecasts, we provide evidence consistent with various constituents in debt markets utilizing cash flow forecasts. This evidence should help elucidate the importance of meeting cash flow expectations to creditors and all those interested in the determinants of a firm's cost of debt.

The remainder of this paper is organized as follows. Section 3.2 reviews the related research. Section 3.3 develops the hypothesis while Section 3.4 describes the research design utilized to test our hypothesis. Section 3.5 describes the sample selection process. Results are presented in Section 3.6 and sensitivity analysis is reported in Section 3.7. Finally, Section 3.8 provides a summary and conclusions overview.

3.2 RELATED RESEARCH

Research examining the incremental value of cash flow forecasts has yielded mixed results. Defond and Hung (2003) was the first study to document an upward trend in the frequency of cash flow forecasts. They attribute analysts' behavior to investor demand for supplemental information when firms have low quality earnings. In support of the 'demand hypothesis', they document that the likelihood of analysts issuing cash flow forecasts increases with the magnitude of accruals, leeway available to management in choosing accounting methods, earnings volatility, capital intensity, and poor financial health. In a later study, Defond and Hung (2007) explore analysts' cash flow forecasts around the world and document that countries with weak investor protection and poor earnings quality are more likely to have cash flow forecasts. These findings provide some evidence that market participants demand cash flow

information when earnings may not reflect the firm's true economic performance. Furthermore, McInnis and Collins (2009) find evidence that investor demand for cash flow forecasts has a positive impact on earnings quality. They point out that cash flow forecasts make accrual manipulations more transparent and help constrain earnings management[26].

Consistent with investors demanding cash flow information, several papers investigate whether market participants reward firms meeting or beating this benchmark. The Defond and Hung (2003) study mentioned previously reports equity markets reward firms that meet/beat cash flow forecasts. Zhang (2009) provides additional evidence that firms meeting/beating cash flow forecasts have higher equity valuations after controlling for meeting/beating earnings forecasts. Brown and Pinello (2009) document that equity markets reward firms based on the following hierarchy: 1) firms that meet both their earnings and cash flow forecast; 2) firms that meet their earnings forecast but miss their cash flow forecast; 3) firms that meet their cash flow forecast but miss their earnings forecast; 4) firms that miss both forecasts. Their results are consistent with the conjecture that meeting cash flow forecasts is important to equity investors but not quite as important as meeting earnings forecasts.

Consistent with prior studies Givoly et al. (2009) document an upward trend in the frequency of cash flow forecasts and provide descriptive evidence related to equity markets that cash flow forecasts increase in accuracy for firms with greater analyst following, more profitable firms, larger firms, and high growth firms. However, the authors question the plausibility of the demand hypothesis. As previously described, the demand hypothesis assumes that investors lack confidence in the quality of earnings. Consequently, the quality of cash flow forecasts helps satisfy investor demand for information beyond what is available in analysts' earnings forecast.

[26] In a similar vein, Call et al. (2009) link the issuance of cash flow forecast to the quality of analysts' output. Specifically, analysts issuing cash flow forecasts in addition to earnings forecast better understand the cash flow and accrual components of earnings and produce more accurate earnings forecast.

Givoly et al. (2009) investigate the underlying assumption of quality cash flow forecasts and find them to be less accurate, less frequently revised, and a naïve extension of earnings forecasts. These findings lead the authors to conclude that cash flow forecasts are not meeting investors' demand for better information, but suggest it is possible that analysts issue cash flow forecasts based upon their perception of investor demand for this information. Givoly et al. (2009) acknowledge the possibility that in certain settings, cash flow forecast information and corresponding research could be beneficial; particularly for firms exhibiting various characteristics, such as larger, high growth oriented firms. Our research extends the overall cash flow forecast literature by exploring the effects of cash flow forecasts in the bond arena, which is an important alternative market domain whose stakeholders have different residual claims to the firm compared to stockholders. In addition, our particular sample is comprised of larger, more growth-oriented firms than the overall population which provides some subsample evidence as encouraged by Givoly et al. (2009).

3.3 HYPOTHESES DEVELOPMENT

Analysts' cash flow forecasts provide a heuristic benchmark for which a firm's stakeholders can evaluate firm performance with limited information processing costs[27]. Missing this benchmark can provide a useful signal to investors related to management's ability to meet their budget or the firm's ability to continue with its scheduled capital expenditures or debt repayments (Minton and Schrand 1999). While a large body of literature documents the importance of meeting or beating analysts' earnings forecasts (Brown 2001; Brown and Caylor 2005; Jiang 2008), only recently have researchers begun to investigate the importance of meeting

[27] There is an extensive body of work examining the importance of meeting or beating heuristic targets. For examples see Burgstahler and Dichev (1997), Degeorge et al. (1999), Bartov et al. (2002), Roychowdhury (2006), Jiang (2008).

or beating analysts' cash flow forecasts (Defond and Hung 2003; Brown and Pinello 2009; Zhang 2009). This avenue of research has focused exclusively on the equity markets. Our research extends the existing literature by exploring the importance of meeting or beating analysts' cash flow forecasts in debt markets where investors maintain different residual claims to a firm's assets and future prospects.

Research documents that rating analysts and creditors use accounting numbers and accounting benchmarks to evaluate firm performance (Ziebart and Reiter 1992; Datta and Dhillon 1993; Plumer and Tse 1999; Khurana and Raman 2003; Jiang 2008). However, extant research does not provide direct empirical evidence concerning the importance of meeting/beating cash flow forecasts to debt markets constituents, or afford a direct comparison of the importance of these two different types of forecasts in debt markets. Cash flow forecasts provide a comprehensible target by which a firm's stakeholders can evaluate firm performance with limited information processing costs. Additionally, cash flow forecasts should be particularly important to stakeholders in debt markets because bondholders have a different set of contingent claims to the firm. Since bondholders are promised a set schedule of payments that critically depends upon a firm's ability to generate necessary cash flows, they are interested in information that can be used to directly assess liquidity and solvency. Meeting/beating or missing cash flow forecasts provides a signal to investors useful for evaluating management's ability to meet scheduled cash outflows and can also indicate whether a firm may have to delay capital expenditures or debt repayments (Minton and Schrand 1999). To test if meeting or beating analysts' cash flow forecasts is an important heuristic target in the debt markets, we posit the following hypothesis in alternative form:

H1: Firms meeting or beating analysts' cash flow from operations forecast have a lower cost of debt than firms not meeting or beating the forecast.

In testing our hypothesis, we utilize three different, important metrics to operationalize a firm's cost of debt: 1) initial bond ratings, 2) bond yields, and 3) upgrades or downgrades in a firm's bond rating.[28] Each of these metrics results from a different market process or is initiated by a different debt market constituent providing interrelated, but alternative views of the cost of debt. First, the initial bond rating is determined by rating analysts and attached to the initial debt issue, but the timing of the issuance and the process itself is started by the issuing firm's decision to enter the market. Second, the yield is established by bond market investors based on the collective perception of the debt offering. Our third debt metric, bond rating changes, are initiated based on timing selected by the rating analysts. Collectively, these three different metrics provide an informative and reasonably detailed look at the effects of cash flow forecasts on the cost of debt.

In the process of our analyses, we also investigate whether bond market participants treat meeting/beating cash flow forecast benchmarks as supplemental or as a substitute to meeting/beating earnings forecasts. Finally, we examine if achieving either forecast benchmark appears to be more important than the other in a debt market context. A priori, it is not evident whether stakeholders in the debt markets would place more importance on meeting/beating cash flow forecasts or earnings forecasts. Although cash flow is arguably a better metric than earnings for assessing solvency and liquidity (DeFond and Hung 2003; Graham et al. 2005),[29] earnings are the fundamental summary measure of firm performance. Survey results document that CEOs believe earnings are the most important financial measure to external constituents (Graham et al. 2005). Earnings are heavily reported on by the media and are the metric most frequently

[28] For examples of research utilizing these metrics see Sengupta 1998; Minton and Schrand 1999; Ahmed et al. 2002; Shi 2003; Francis et al. 2005; Ayers et al. 2007; Jiang 2008.

[29] Furthermore, a survey of investors, managers, and creditors indicated that creditors incorporate operating cash flows into their decision making behavior substantially more than the other user groups (Jones et al. 1995).

forecasted by analysts (IBES). Furthermore, it is a well supported finding that investors in the equity markets have a preference for earnings over cash flow information (Ball and Brown 1968; Dechow 1994; Brown and Pinello 2009). We provide evidence regarding the relative importance of meeting/beating cash flow versus earnings forecasts in the debt markets.

3.4 RESEARCH DESIGN

3.4.1 Initial Bond Ratings

Our first bond market metric investigates the importance of meeting or beating cash flow benchmarks on a firm's initial bond rating. We implement a model based on the fundamental economic groundwork developed by Kaplan and Urwitz (1979) and enhanced by other researchers over subsequent years. The Kaplan and Urwitz model is econometrically sound and proven robust. In recent years it has provided the basic foundation from which to examine the effects of bonds on various contemporary issues such as corporate governance (Bhojraj and Sengupta 2003; Asbaugh-Skaife et al. 2006), auditor independence (Brandon et al. 2004), quality of earnings (Francis et. al. 2005), and book-tax-differences (Crabtree and Maher 2009). We further augment the model with a cash flow forecast benchmark. The model is specified as follows:

$$\begin{aligned} Rating_{it+1} &= \beta_0 + \beta_1 CashBench_{it} + \beta_2 EarnBench_{it} + \beta_3 UE\_CPS_{it} + \beta_4 UE\_EPS_{it} \\ &+ \beta_5 Sub_{it} + \beta_6 Size_{it} + \beta_7 Leverage_{it} + \beta_8 BookMkt_{it} + \beta_9 ROA_{it} + \beta_{10} StdROA_{it} + \beta_{11} StdCPS_{it} \\ &+ \beta_{12} AQ_{it} + \Sigma_t \beta_t Year_{it} + \Sigma_k \beta_k FF_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

Where:

$Rating_{it+1}$ = an ordinal representation of the issue's Standard and Poor's initial bond rating. We code *Rating* from 1 to 19, with higher numbers corresponding to better ratings (i.e. 19 = AAA, 18 = AA+, …, 1 = CCC-);

$CashBench_{it}$ = 1 if firm *i's* cash flow from operations per share meets or beats the most recent analysts' forecasts for year *t*; and 0 otherwise.

$EarnBench_{it}$ = 1 if firm *i's* earnings from continuing operations per share meets or beats the most recent analysts' forecasts for year *t*; and 0 otherwise;

UE_CPS_{it} = firm *i's* actual cash flow per share in year *t* minus the most recent analysts' forecasts for year *t*, divided by its stock price at the end of year *t-1*;

UE_EPS_{it} = firm *i's* earnings from continuing operations per share in year *t* minus the most recent analysts' forecasts for year *t*, divided by its stock price at the end of year *t-1*;

Following prior literature, we also include each of the following independent variables to control for factors known to affect the default risk of the firm:

Sub_{it} = 1 for subordinated bonds and 0 for senior bonds;

$Size_{it}$ = the log of firm *i's* total assets measured at the end of year *t*;

$Leverage_{it}$ = firm *i's* long term debt divided by total assets at the end of year t;

$BookMkt_{it}$ = the log firm *i's* book value of equity divided by its market value of equity, both measured at the end of year *t*;

$StdROA_{it}$ = firm *i's* standard deviation of ROA calculated using five years of data from year *t-4* to *t* where ROA is calculated as net income before extraordinary items scaled by total assets at the beginning of the year;

$StdCPS_{it}$ = firm *i's* standard deviation of cash flow from operation per share calculated using five years of data from year *t-4* to *t*. Cash flow from operations per share is defined in year *t*, divided by its stock price at the end of year *t-1;*

AQ_{it} = firm *i*'s abnormal accruals estimated using the Dechow et al. (2003) forward-looking model. Firms with higher AQ_{it} values are considered to have poorer accrual quality;

$Year_{it}$ = 1 if the observation is in year *t*, and 0 otherwise;

FF_{it} = 1 if the observation is in the respective Fama-French industry (*k = 1 to 43* minus financial, insurance, and public utility industries) as defined in Fama and French (1997), and 0 otherwise;

The model assesses the importance of meeting or beating analysts' cash flow forecasts ($CashBench_{it}$) relative to the importance of meeting or beating analysts' earnings forecasts ($EarnBench_{it}$). Following Jiang (2008) we also include continuous cash and earnings variables

where cash flow surprise (UE_CPS_{it}) and earnings surprise (UE_EPS_{it}) control for the effect of unexpected cash flow and earnings on a firm's cost of debt[30]. Including these continuous cash flow and earnings variables allows the model to isolate the effect of specifically meeting or beating the cash flow or earnings benchmark[31]. It is expected that both the cash and earnings benchmark and the continuous earnings and cash controls will be positively related to $Rating_{it+1}$[32].

Beyond controlling for continuous earnings and cash variables, the model includes additional control variables that prior research has shown to be economically linked to a firm's bond rating. Prior research has shown that bond ratings are linked to firm performance and risk (Kaplan and Urwitz 1979; Ahmed et al. 2002; Campbell and Taksler 2003). We include the bond's subordination status (Sub_{it}). Subordinated bond issues have less protection than senior issues in the event of default; therefore, Sub_{it} is expected to be negatively related to the bond's initial rating. We include multiple measures of firm performance including: book-to-market ratio ($BookMkt_{it}$) and dispersion of return on assets ($StdROA_{it}$). Since better performing firms with less volatile earnings have higher bond ratings, we predict negative coefficients on $BookMkt_{it}$ and $StdROA_{it}$. To control for risks, we include a measure of firm size ($Size_{it}$) and leverage ($Leverage_{it}$). There is an inverse relationship between firm risk and bond ratings. Large firms are viewed as less risky while higher leverage indicates more risk. We therefore predict a positive

[30] Approximately 43 percent of our sample is missing IBES actual cash flow from operations which is necessary to calculate the $CashBench_{it}$ benchmark and UE_CPS_{it}. For these firms, we follow Givoly et al. (2009) and use cash flow from operations as reported in COMPUSTAT divided by IBES shares outstanding. As described in more detail later, all inferences remain unchanged if we restrict our sample to those observations with IBES actual cash flow.
[31] In a sensitivity test we included other continuous cash and earnings variables including cash flow from operations per share and earnings from operations per share. All inferences remained unchanged when these additional cash and earnings controls are included.
[32] The rating change can actually occur any time between the annual earnings announcement for year *t* (announced in year *t+1*) and the fiscal year end for year *t+1*. As described in more detail later, all inferences remain unchanged if we restrict our sample to rating changes occurring within the first 45 days after the annual earnings announcement for year *t*.

coefficient on $Size_{it}$ and a negative coefficient on $Leverage_{it}$. We also include a measure of cash flow volatility ($StdCPS_{it}$). Minton and Schrand (1999) provide evidence that cash flow volatility is negatively related to firms' bond ratings. It is also likely that cash flow volatility will be correlated with a firm's ability to meet or beat analysts' forecast of cash flow and, therefore, important to include as a control variable in the model. We expect a negative relationship between cash flow volatility and $Rating_{it}$. Following prior research, we also include accrual quality (AQ_{it})[33], predicting a negative coefficient on AQ_{it}, indicating firms with poor accrual quality (high AQ_{it}) have lower bond ratings (Francis et al. 2005). Finally, we include year ($Year_{it}$) and industry (FF_{it}) indicator variables to control for time varying factors and industry effects related to bond ratings (Blume et al. 1998; Crabtree and Maher 2009).

If rating agencies view meeting or beating analysts' forecasts of cash flow as an important performance indicator, then the coefficient on $CashBench_{it}$ should be significantly positive which would support H1. If the cash flow benchmark is more important than the earnings benchmark then the coefficient on $CashBench_{it}$ should be significantly larger than the coefficient on $EarnBench_{it}$. However, if the earnings benchmark is more important than the cash flow benchmark then the converse should be true. Logical reasoning can be provided to support the cash flow or earnings benchmark. Thus, we do not make an explicit prediction for this comparison.

3.4.2 Bond Yields

In our second analyses, we investigate the relation between meeting/beating analysts' cash flow forecasts and a firm's initial bond yield spread. The initial yield spread is the firm's

[33] Abnormal accrual estimation models differ in the assumptions made concerning the classification of discretionary and non-discretionary accruals. We use Dechow et al. (2003) forward-looking accrual model to estimate discretionary accruals because the model allows for nondiscretionary receivables and controls for future sales growth. The forward-looking model has more than double the explanatory power of the modified Jones model (Dechow et al. 2003).

yield over the comparable maturity Treasury security[34]. Prior research has used bond yield as a direct proxy for a firm's cost of debt (Sengupta 1998; Shi 2003; Jiang 2008; Crabtree and Maher 2009). Unlike rating changes, which reflect the perception of the debt rating agency, the yield spread metric is determined in the marketplace by investors who collectively price the bond. The initial yield spread model should allow us to capture how bondholders impound information related to meeting or beating cash flow benchmarks.

It is important to recognize that the yield is established after the initial bond rating because rating agencies assign the rating to a firm's bond before the actual issuance date. Thus, it is necessary to include a measure of a firm's initial rating in any yield model because investors know the assigned rating at the time they enter the bond market and establish the actual purchase price. However, including the actual bond rating directly in the yield model creates econometric problems due to information captured by the independent variables in the model being impounded in the firm's initial rating. To alleviate this problem, we follow Mansi et al. (2004) and implement a two-stage regression. In the first stage, we estimate $RatingOrth_{it+1}$ as the portion of the bond's initial rating orthogonal to the $CashBench_{it}$ and $EarnBench_{it}$ benchmarks and other variables that explain initial bond yields. We estimate $RatingOrth_{it+1}$ as the residual from Equation 1. Using the orthogonal rating ($RatingOrth_{it+1}$), we develop our model based on prior literature and estimate the second stage model to include all control variables in Equation 1, as well as four additional control variables related to characteristics of the bond issue:

$$\begin{aligned} Yield_{it+1} &= \beta_0 + \beta_1 CashBench_{it} + \beta_2 EarnBench_{it} + \beta_3 UE\_CPS_{it} + \beta_4 UE\_EPS_{it} \\ &+ \beta_5 Sub_{it} + \beta_6 Size_{it} + \beta_7 Leverage_{it} + \beta_8 BookMkt_{it} + \beta_9 ROA_{it} + \beta_{10} StdROA_{it} + \beta_{11} StdCPS_{it} \\ &+ \beta_{12} AQ_{it} + \beta_{13} IssueSize_{it} + \mathrm{B}_{14} Call_{it} + \beta_{15} Term_{it} + \beta_{16} RatingOrth_{it+1} + \Sigma_t \beta_t Year_{it} + \Sigma_k \beta_k FF_{it} + \nu_{it} \end{aligned} \quad (2)$$

[34] In a sensitivity test, we examine the effects of meeting or beating cash flow benchmarks on relative yield spreads (i.e. (bond yield – Treasury bill yield) / Treasury bill yield). Using relative yields does not change any of the inferences drawn from our reported results.

Where:

$Yield_{it+1}$ = firm *i's* yield to maturity at the issuance date minus the Treasury bond yield with a similar maturity;

$IssueSize_{it}$ = the natural log of the offering amount (in millions of dollars) of the bonds;

$Call_{it}$ = the ratio, between 0 and 1, of the number of years to first call divided by the number of years to maturity. If there is no call provision $Call_{it}$ is 1. If the bond is callable from the date of issuance $Call_{it}$ is 0.

$Term_{it}$ = years to the maturity of the bond;

$RatingOth_{it+1}$ = orthogonal rating is the residual from Equation 1;

All other variables in Equation 2 are as defined previously in Equation 1.

This model investigates the effect of meeting or beating cash flow benchmarks on the yield spread of new bond issues ($Yield_{it+1}$). High quality, low risk bonds typically have smaller yield spreads than low quality, high risk bonds. Based on the inverse relationship between yields and risk, we expect all coefficients to have the opposite sign explained previously for Equation 1.

We add additional issue characteristics to this model that prior research has shown to affect the bond yield (Fisher 1959; Ziebart and Reiter 1992; Sengupta 1998; Bhojraj and Sengupta 2003; Khurana and Raman 2003). These include the bond's orthogonal rating ($RatingOth_{it}$), issue size ($IssueSize_{it}$), call provision ($Call_{it}$), and term ($Term_{it}$).[35] $RatingOth_{it+1}$ should be negatively related, consistent with higher rated bonds having lower yield spreads. Existing research has found conflicting results with respect to the size of the bond issue. On one hand, larger issues are generally more liquid (Sengupta 1998) and therefore a negative relation with the bond's initial yield would be expected. Conversely, large issues also indicate the firm is taking on more debt which could lead to a positive relation with the bond's initial yield (Shi 2003). We include $IssueSize_{it}$ in the model but make no explicit prediction regarding the

[35] In a sensitivity test, we also include issue characteristics in the initial ratings model (Equation 1). This does not change any inferences drawn from our reported results.

expected sign. The bond's call provision exposes bondholders to interest risk (Jiang 2008). It is therefore expected that the call ratio will be negatively related to the bond's initial yield spread. Finally, the years to maturity ($Term_{it}$) is included because short-term maturities are considered less risky than long-term maturities. Thus, we expect the term of the bond to be positively related to the initial yield spread.

3.4.3 Bond Rating Changes

The third, and final, debt market metric we explore relates to subsequent bond rating changes. Investigating rating changes is advantageous for several reasons. First, while bond rating agencies disclose their general methodologies to the public, it is not possible to precisely define the exact metrics and weights bond rating analysts use to evaluate firm performance and risk. Thus, bond rating models can suffer from the concern of a possible omitted correlated variable (Jiang 2008). Additionally, since bond ratings tend to be correlated across time there is concern that the error terms in an initial rating levels model will be autocorrelated (Jiang 2008). Using a rating change model helps to alleviate these concerns. A second advantage to a rating change model is that modifications are initiated by the rating agencies themselves, as compared to a new issuance rating which is initiated by the firm's conscious and voluntary decision to issue new debt at a particular point in time. We develop and implement a rating change model based on prior literature and similar to Jiang (2008). The rating change model is similar to Equation 1 except we calculate year to year changes for each of the relevant variables including the dependent variable (i.e. the firm's Standard & Poor's senior debt rating). The model is specified as follows:

$$\begin{aligned}\Delta Rating_{it+1} &= \beta_0 + \beta_1 CashBench_{it} + \beta_2 EarnBench_{it} + \beta_3 UE\_CPS_{it} + \beta_4 UE\_EPS_{it} \\ &+ \beta_5 \Delta Totalassets_{it} + \beta_6 \Delta Leverage_{it} + \beta_7 \Delta BookMkt_{it} + \beta_8 \Delta ROA_{it} + \beta_9 \Delta StdROA_{it} \\ &+ \beta_{10} \Delta StdCPS_{it} + \beta_{11} \Delta AQ_{it} + \Sigma_t \beta_t Year_{it} + \Sigma_k \beta_k FF_{it} + \lambda_{it}\end{aligned} \quad (3)$$

Since rating change data is only available for senior debt issues, the basic model does not include a control for the subordination status of the bond. The model estimates the probability of a rating change for meeting or beating and missing cash flow and earnings forecasts. All variables and coefficient predictions are the same as described previously for Equation 1.

3.5 SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

We examine initial ratings, initial yields, and rating changes for the time period January 1993 to December 2007.[36] Our sample consists of non-financial, non-insurance firms that issue bonds backed solely by the issuer's ability to pay. No convertible bonds, mortgage bonds, asset-backed bonds, or deferred interest bonds are included. This allows us to examine bonds whose ratings or yields are based entirely on the issuing firm's default risk and not the risk of the underlying asset or option.

We collect initial bond ratings and yields for new issuances available on the Securities Data Company's Global New Issues Database. The rating changes sample includes firms with Standard and Poor's (S&P) long term "issuer" ratings available on the annual Compustat file. The long term rating is a measure of a company's ability to meet senior obligations and is generally the same rating assigned to individual debt issuances. We use the I/B/E/S detail history file to construct the expected cash and earnings benchmarks ($CashBench_{it}$ and $EarnBench_{it}$) and the unexpected cash and earnings controls (UE_CPS_{it} and UE_EPS_{it}). All other variables are constructed using data available on Compustat.

Table 1 compares descriptive statistics for the initial rating and rating change samples to those of the Compustat population. The descriptive statistics for the initial yield sample are nearly identical to the initial rating sample. Thus, direct comparisons to the overall Compustat

[36] Analysts did not forecast cash flow from operations prior to 1993.

population are not provided for the initial yield sample. As shown in Panel A, the initial rating sample consists of larger (total assets of 19,090 vs. 1,787 in millions), more growth oriented (*BookMkt* ratio of 0.0019 vs. 0.0660) firms when compared to the Compustat population. The initial rating firms also have less volatile return on assets (*StdROA* of 0.0462 vs. 0.2001) and cash flow (*StdCPS* 0.0425 vs. 0.1647) when compared to the Compustat population. Comparisons for the rating change sample to the overall Compustat population are provided in Panel B. Although the rating change sample includes more observations than the initial rating sample, it is somewhat similar in that it also includes larger, growth firms with less volatile return on assets and cash flow when compared to the overall Compustat population.

[INSERT TABLE 1 HERE]

3.6 RESULTS

While investigating the three different cost of debt related metrics to examine the importance of cash flow forecasts in the debt markets, the initial rating model (Equation 1) and the rating change model (Equation 3) are estimated using ordered logistic regression[37]. The initial yield model (Equation 2) is estimated using ordinary least squares. To control for heteroscedasticity, p-values are reported using robust standard errors (White 1980).

3.6.1 Initial Rating Model

The initial rating sample consists of 389 observations for 171 firms. Spearman and Pearson correlation coefficients for all of the variables in the initial rating model are presented in Table 2[38]. Significant correlations ($p < 0.10$) are indicated in bold. The Spearman (Pearson)

[37] Ordinary least squares (OLS) estimation is not appropriate for initial rating or rating change models because bond ratings may not represent equally spaced discrete intervals. For example, a change from BBB- (investment grade) to BB+ (non-investment grade) generally is associated with a greater increase in risk than a change within a specific rating category (i.e. a single grade change within the low medium grade category). However, inferences are similar if OLS estimation is used.

[38] Correlations for the initial yield sample are similar and therefore, not reported.

correlation between the *Rating* variable and the meet/beat cash flow benchmark (*CashBench)* is significant (0.12 and 0.08) providing some univariate support for our hypothesis that meeting or beating cash flow forecasts is positively related to initial ratings. The correlation between the *Rating* variable and the meet/beat benchmark (*EarnBench)* is similar at (0.08 and 0.08). There is little difference between the *CashBench* and *EarnBench* correlations providing some preliminary univariate evidence that while each is incrementally important; neither benchmark appears to be more important than the other in terms of influencing initial bond ratings.

[INSERT TABLE 2 HERE]

Multivariate results for the initial rating model are presented in Table 3. The coefficient on the cash flow benchmark (*CashBench*) is positive and significant (p = 0.001) supporting Hypothesis 1. The coefficient on the earnings benchmark (*EarnBench*) is slightly smaller but also positive and significant (p = 0.0061). All control variables in the model follow their predicted signs or are insignificant. The results of a Chi-Squared test to directly compare the coefficients on the cash and earnings benchmarks (*CashBench vs. EarnBench*) are displayed in Panel B. While the *CashBench* coefficient is slightly larger (0.7038 vs. 0.5707), no statistical difference can be detected consistent with the conjecture that bond raters appear to use both cash and earnings forecasts but that one is not clearly preferred over the other.

[INSERT TABLE 3 HERE]

3.6.2 Initial Yield Model

Our next analyses relates to our second cost of debt metric, the yield assigned to the firm's new issue of debt. While bond ratings and yields are often highly correlated, they are the result of distinctly different processes, each of which can offer additional insight into the importance of cash flow forecasts for bonds.

The initial yield sample consists of 354 new bond issues rated by Standard and Poor's for 166 firms. Because debt quality is negatively correlated with bond yields, the expected signs reverse in the initial yield sample. The results for the second stage of the two-stage initial yield regression are presented in Table 4. Most importantly, the coefficient on *CashBench* is negative and significant (p = 0.0073), providing additional support for H1. The coefficient provides an estimate that meeting or beating *CashBench* lowers a firm's cost of debt by approximately 25.09 basis points. Based on the average bond issue in our sample of $493 million, a reduction of 25.09 basis points would result in annual interest savings of $1.24 million, (and total present value savings of $9.71 million[39]). Results for the *EarnBench* benchmark are also consistent with prior expectations, shown in Table 4 to be negative and significant (p = .0192). With respect to comparing the importance of each benchmark, t-test comparisons provided in Panel B indicate that the two coefficients are not significantly different. The overall analyses indicate that both the cash flow benchmark and the earnings benchmark are individually important to bond investors, but the data does not support that either the cash or earnings benchmark is individually more important to these investors.

[INSERT TABLE 4 HERE]

3.6.3 Rating Change Model

Our final analysis investigates the effects of meeting cash and earnings benchmarks on bond rating changes. A bond rating change can occur for a variety of reasons, but in all cases the underlying cause is the perception of a material increase or decrease in the default risk of the firm's debt which prompts the rating agency to move the rating to a different category. Increased data availability due to using the existing credit rating filed in Compustat allows us to expand the sample to 4,181 observations covering 958 firms.

[39] Present value calculation based on the average initial yield (6.21%) and maturity (11 years) for the sample.

Table 5 presents results for the rating change model. The dependent variable (*ΔRating*) is coded between -4 to 4.[40] A coding of -4 (4) represents a downgrade (upgrade) of 4 (e.g. moving down from AA to A- or moving up from A- to AA). Coefficient estimates and p-values are provided in Panel A. The coefficient on *CashBench* is positive and significant, providing additional support for our first hypothesis (H1) that meeting or beating analysts' cash flow forecasts reduces a firm's cost of debt. The coefficient on *EarnBench* is also positive and significant. All other variables in the model follow their predicted sign or are not significantly different from zero. Panel B compares the coefficients for meeting/beating the cash flow benchmark (*CashBench)* and the earnings benchmark (*EarnBench)*. Consistent with results found using the initial rating and yield models, the coefficients on *EarnBench* and *CashBench* are not significantly different indicating both benchmarks are important for rating changes but neither one appears to be individually more important than the other. Thus, each benchmark is approximately equal with respect to its overall effect on initiating a rating change.

To provide an economic interpretation of our results, we estimate the probability of a rating upgrade or downgrade when the *CashBench* and *EarnBench* indicators switch from 0 to 1 while holding all other variables in the model at their means. The results are reported in Panel C of Table 5. Meeting or beating both the *CashBench* and *EarnBench* benchmarks increases the probability of a rating upgrade by 3.99 percent while missing both the *CashBench* and *EarnBench* benchmarks increases the probability of a rating downgrade by 8.41 percent. It is interesting to note the asymmetric relationship between rating changes and the benchmarks. Missing the benchmarks has a much larger impact on rating changes than meeting or beating the benchmarks which re-

[40] Following Jiang (2008) rating changes greater than 4 or less than -4 are eliminated. A rating change of this magnitude is likely due to a coding error or significant events (i.e. merger or acquisition) which are not controlled for in the rating change model. Inferences are unaffected if these extreme rating changes are left in the model. Inferences are also unaffected if upgrades and downgrades are grouped (i.e. the dependent variable is coded as 1 for upgrades, 0 for no change, and -1 for downgrades).

confirms the finding reported in Easton et al. (2009) that bonds are more sensitive to reported bad news than good news.

[INSERT TABLE 5 HERE]

Collectively, the three alternative cost of debt metrics provide substantial support for our hypothesis (H1) that meeting or beating cash flow forecasts is an important performance benchmark for stakeholders in the debt markets. Although we find evidence in our analyses consistent with the conjecture that bond investors' value information related to the cash flow benchmark, as well as the earnings benchmark, we do not find convincing evidence indicating one benchmark is more important than another.

3.7 SENSITIVITY ANALYSES

3.7.1 Rating Changes Following Announcements of Earnings and Operating Cash Flow

As discussed earlier, rating changes are initiated by the rating agency as opposed to initial ratings and yields which are initiated by the firm's decision to issue new debt. A bond rating change occurs when the rating agency perceives a material increase or decrease in the default risk of the firm's debt. In order to limit the possibility that a rating change occurred in response to events other than meeting or beating cash and earnings forecasts, we limit the sample to rating changes occurring within the first 45 days subsequent to the announcement of earnings and operating cash flow. In untabulated results, both the coefficients on *CashBench* and *EarnBench* remain positive and significant ($p < .05$) when this reduced sample is used.

3.7.2 IBES Cash Flow Actuals

One of the potential problems in utilizing cash flow forecasts is the reduced availability compared to earnings forecasts on IBES. To alleviate this concern, we follow Givoly et al.

(2009) and replace missing IBES actuals by calculating cash flow per share using cash flow from operations as available in Compustat divided by shares outstanding as reported in IBES. This measure is highly correlated with IBES cash flow actuals, but admittedly is not perfect. Compustat reports operating cash flow in millions making it impossible to calculate actual cash flow per share. To help ensure the validity of our overall results, we re-estimate the initial rating and rating change model using only observations that have IBES cash flow per share actuals[41]. Non-tabulated inferences using this reduced dataset regarding the initial rating and rating change model remain unchanged.

3.7.3 Post-Scandal Period

Finally, we also investigate whether our results hold for the period subsequent to the major accounting scandals of the early 2000s (post-scandal period).[42] In the equity markets, Koh et al. (2008) document that the reward for meeting or beating analysts' earnings forecasts significantly declines during the post-scandal period. The authors posit that the diminished reward is due to investor skepticism related to the quality of earnings for meet or beat firms. We estimate Equations 1, 2, and 3 (initial rating, initial yield, and rating change models) for the 2003-2007 post scandal-period and find in untabulated analyses, the coefficient estimates for the *CashBench* and *EarnBench* benchmarks continue to remain significant and positive in all models.

3.8 SUMMARY AND CONCLUSIONS

Our research examines the importance of meeting or beating analysts' cash flow forecasts on a firm's cost of debt and utilizes three important metrics to represent a firm's cost of debt: 1) initial bond rating, 2) bond yield, and 3) changes in ratings. Each of these metrics is determined

[41] Data limitations restrict us from conducting an initial yield analysis with IBES CPS actuals.
[42] We follow Koh et al. (2008) in defining the post-scandal period .

by a separate market process, or the timing is initiated by a different market constituent. Some recent research conducted in the equity arena has questioned the quality and usefulness of overall cash flow forecasts (Givoly et al. 2009), but has called for additional investigation into certain subsets of firms. Our research adds to the existing literature by investigating the effects of cash flow benchmarks in the bond arena. We provide evidence that firms meeting or beating their cash flow forecasts exhibit higher initial ratings. Furthermore, with respect to bond pricing, firms meeting or beating their cash flow forecasts are more likely to obtain lower borrowing costs through lower initial bond yields. Finally, we also document that firms meeting or beating (missing) cash flow forecasts have a higher probability of receiving a bond rating upgrade (downgrade). While we find that each benchmark provides incrementally different and important information, we are unable to provide support that bond investors value cash flow or earnings benchmarks significantly above the other.

These results should help provide insight with respect to the importance of meeting cash flow expectations for all those interested in the determinants of a firm's cost of debt. While it has been shown that the quality of current cash flow forecasts do not appear to be as high as earnings forecasts, our results are consistent with the conjecture that significant bond market constituents incorporate cash flow forecasts and associated benchmarks into their decision processes. Our results suggest stakeholders in the debt markets rely on cash flow forecasts as incremental and supplemental to earnings forecasts.

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Figure 1
Percent of Firms on I/B/E/S Receiving a CFO Forecasts

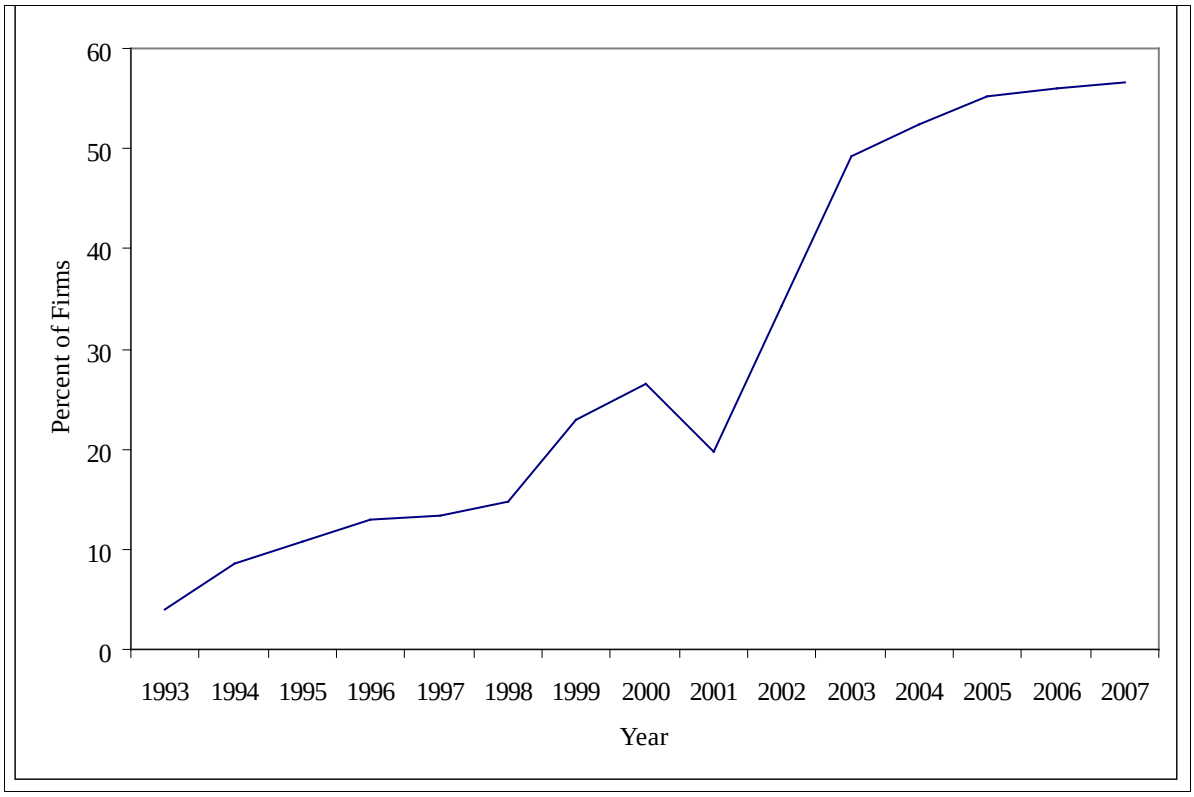

Table 1

Descriptive Statistics – Sample Comparisons with COMPUSTAT

Panel A: Initial Rating Sample, n = 389

	Initial Rating					COMPUSTAT Population		
Variable	Mean	Std Dev	25th	Median	75th	Mean	Difference	n
CashBench	0.5604	0.4970	0	1	1	0.5601	0.0003	13109
EarnBench	0.7249	0.4471	0	1	1	0.6094	0.1156	58034
UE_CPS	0.0056	0.0677	-0.0079	0.0020	0.0161	0.0063	-0.0007	13109
UE_EPS	-0.0008	0.0252	-0.0002	0.0003	0.0012	-0.0065	0.0057	58034
Total Assets	19090	49318	3935	8891	19042	1787	17303	162376
Leverage	0.2928	0.1318	0.1918	0.2808	0.3711	0.2673	0.0255	161463
BookMkt	0.0019	0.0039	0.0003	0.0008	0.0021	0.0660	-0.0641	130054
StdROA	0.0462	0.1864	0.0132	0.0224	0.0392	0.2001	-0.1540	77480
StdCPS	0.0425	0.0572	0.0135	0.0233	0.0480	0.1647	-0.1222	66450
AQ	0.3613	2.5583	0.0522	0.1043	0.2434	0.3136	0.0477	77426

Panel B: Rating Change Sample, n = 4,181

	Rating Change					COMPUSTAT Population		
Variable	Mean	Std Dev	25th	Median	75th	Mean	Difference	n
CashBench	0.5618	0.4962	0	1	1	0.5601	0.0018	13109
EarnBench	0.6862	0.4641	0	1	1	0.6094	0.0768	58034
UE_CPS	0.0125	0.3122	-0.0127	0.0023	0.0219	0.0063	0.0062	13109
UE_EPS	-0.0023	0.1010	-0.0004	0.0004	0.0018	-0.0065	0.0042	58034
Total Assets	13574	37003	1913	4308	11864	1787	11788	162376
Leverage	0.2983	0.1508	0.1921	0.2880	0.3923	0.2673	0.0309	161463
BookMkt	0.0044	0.0116	0.0007	0.0019	0.0044	0.0660	-0.0616	130054
StdROA	0.0442	0.0794	0.0138	0.0261	0.0496	0.2001	-0.1559	77480
StdCPS	0.0868	0.3633	0.0207	0.0394	0.0749	0.1647	0.1150	66450
AQ	0.2304	0.3643	0.0553	0.1314	0.2667	0.3136	-0.0223	77426

Where **CashBench** $_{it}$ is 1 if firm *i's* cash flow from operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **EarnBench** $_{it}$ is 1 if firm *i's* earnings from continuing operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **UE_CPS** $_{it}$ is firm *i's* actual cash flow per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; **UE_EPS** $_{it}$ is firm *i's* earnings from continuing operations per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*, corresponding to EarnBench$_{it}$; we also include year to year change for each of the following variables: **Totalassets** $_{it}$ is firm *i*'s total assets (in millions) measured at the end of year *t*; **Leverage** $_{it}$ is firn *i's* long term debt divided by total assets at the end of year t; **BookMkt** $_{it}$ is the log of firn *i's* book value of equity divided by its market value of equity, both measured at the end of year *t*; **StdROA**$_{it}$ is firm *i's* standard deviation of ROA calculated using five years of data from year *t-4* to *t*, where ROA is net income before extraordinary items scaled by total assets at the beginning of the year; **StdCPS**$_{it}$ is firm *i's* standard deviation of cash flow from operation per share calculated using five years of data from year *t-4* to *t*. Cash flow from operations per share is defined in year t divided by its stock price at the end of year *t-1;* **AQ**$_{it}$ *is* firm *i*'s abnormal accruals estimated using the Dechow et al. (2003) forward-looking model. Firms with higher AQ_{it} values are considered to have poorer accrual quality.

Table 2

Pearson /Spearman Correlation Coefficients

Initial Ratings Model, n = 389

	Rating	CashBench	EarnBench	UE_CPS	UE_EPS	Size	Leverage	BookMkt	StdROA	StdCPS	AQ
Rating		**0.08**	**0.08**	-0.03	**0.09**	**-0.47**	**0.52**	**-0.35**	**-0.46**	-0.05	**-0.43**
CashBench	**0.12**		0.01	**0.46**	-0.03	0.03	0.03	**-0.07**	0.00	-0.03	0.01
EarnBench	**0.08**	0.01		-0.04	**0.17**	**-0.07**	0.01	-0.05	-0.03	**-0.12**	0.05
UE_CPS	**0.09**	**0.86**	-0.03		**-0.23**	0.01	0.02	-0.04	0.03	0.03	0.06
UE_EPS	**-0.13**	-0.06	**0.77**	-0.06		0.03	-0.03	**-0.07**	-0.01	-0.04	-0.03
Size	**-0.36**	0.03	**-0.07**	0.01	-0.02		**-0.31**	**0.21**	**0.40**	0.01	**0.17**
Leverage	**0.45**	0.01	0.01	0.01	**-0.11**	**-0.28**		**-0.23**	**-0.52**	**-0.07**	**-0.25**
BookMkt	**-0.30**	**-0.08**	-0.06	**-0.08**	0.01	**0.20**	**-0.21**		**0.33**	0.04	**0.24**
StdROA	**-0.69**	**-0.08**	-0.03	-0.06	**0.18**	**0.27**	**-0.82**	**0.34**		0.04	**0.52**
StdCPS	**-0.20**	-0.04	-0.05	-0.05	**0.10**	**0.11**	**-0.26**	0.02	**0.24**		0.03
AQ	**-0.58**	-0.02	-0.02	0.02	**0.16**	**0.15**	**-0.30**	**0.22**	**0.59**	**0.33**	

Bolded correlation coefficients are significant at p < .10 (one-tailed) significance levels

We code $\boldsymbol{Rating_{it}}$ from 1 to 19, with higher numbers corresponding to better ratings (i.e. 19 = AAA, 18 = AA+, …, 1 = CCC-); **CashBench** $_{it}$ is 1 if firm *i's* cash flow from operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **EarnBench** $_{it}$ is 1 if firm *i's* earnings from continuing operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **UE_CPS** $_{it}$ is firm *i's* actual cash flow per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; **UE_EPS** $_{it}$ is firm *i's* earnings from continuing operations per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*, corresponding to $EarnBench_{it}$; we also include year to year change for each of the following variables: **Size** $_{it}$ is the natural log of total assets measured at the end of year *t*; **Leverage** $_{it}$ is firn *i's* long term debt divided by total assets at the end of year t; **BookMkt** $_{it}$ is the log of firn *i's* book value of equity divided by its market value of equity, both measured at the end of year *t*; $\boldsymbol{StdROA_{it}}$ is firm *i's* standard deviation of ROA calculated using five years of data from year *t-4* to *t*, where ROA is net income before extraordinary items scaled by total assets at the beginning of the year; $\boldsymbol{StdCPS_{it}}$ is firm *i's* standard deviation of cash flow from operation per share calculated using five years of data from year *t-4* to *t*. Cash flow from operations per share is defined in year t divided by its stock price at the end of year *t-1;* $\boldsymbol{AQ_{it}}$ *is* firm *i*'s abnormal accruals estimated using the Dechow et al. (2003) forward-looking model. Firms with higher AQ_{it} values are considered to have poorer accrual quality.

Table 3

Multivariate Analysis of Meeting or Beating Cash Flow and Earnings Forecasts on Initial Bond Ratings

$$Rating_{it+1} = \beta_0 + \beta_1 CashBench_{it} + \beta_2 EarnBench_{it} + \beta_3 UE\_CPS_{it} + \beta_4 UE\_EPS_{it}$$
$$+ \beta_5 Sub_{it} + \beta_6 Size_{it} + \beta_7 Leverage_{it} + \beta_8 BookMkt_{it} + \beta_9 StdROA_{it} + \beta_{10} StdCPS_{it}$$
$$+ \beta_{11} AQ_{it} + \Sigma_t \beta_t Year_{it} + \Sigma_k \beta_k FF_{it} + \varepsilon_{it}$$

Panel A: Ordered Logistic Analysis (n=389)

Variable	Pred. Sign	Coef.	P-Value
CashBench	+	0.7038	0.0010
EarnBench	+	0.5707	0.0061
UE_CPS	+	-0.6103	0.3596
UE_EPS	+	6.6992	0.0466
Sub	-	-3.8049	0.0000
Size	+	0.5865	0.0000
Leverage	-	-4.1513	0.0000
BookMkt	-	-69.5337	0.1089
StdROA	-	0.7938	0.0933
StdCPS	-	-17.4254	0.0000
AQ	-	-0.3871	0.0284
Adj. R^2	0.7347		

Panel B - Coefficient Difference Between CashBench and EarnBench Benchmark

Model	CashBench Coefficient	EarnBench Coefficient	Dif.	P-Value
Initial Yield	0.7038	0.5707	0.1331	0.6725

P-values reported in Panel A are based on one-tailed tests. P-value reported in Panel B is based on two-tailed chi-squared test.

Where **$Rating_{it+1}$** is an ordinal representation of the issue's Standard and Poor's initial bond rating. We code *Rating* from 1 to 19, with higher numbers corresponding to better ratings (i.e. 19 = AAA, 18 = AA+, …, 1 = CCC-); **CashBench $_{it}$** is 1 if firm *i's* cash flow from operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **EarnBench $_{it}$** is 1 if firm *i's* earnings from continuing operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **UE_CPS $_{it}$** is firm *i's* actual cash flow per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; **UE_EPS $_{it}$** is firm *i's* earnings from continuing operations per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; **Sub_{it}** is 1 for subordinated bonds and 0 for senior bonds; **Size $_{it}$** is the natural log of total assets measured at the end of year *t*; **Leverage $_{it}$** is firn *i's* long term debt divided by total assets at the end of year t; **BookMkt $_{it}$** is log of firn *i's* book value of equity divided by its market value of equity, both measured at the end of year *t*; **$StdROA_{it}$** is firm *i's* standard deviation of ROA calculated using five years of data from year *t-4* to *t*, where ROA is net income before extraordinary items scaled by total assets at the beginning of the year; **$StdCPS_{it}$** is firm *i's* standard deviation of cash flow from operation per share calculated using five years of data from year *t-4* to *t*. Cash flow from operations per share is defined in year t divided by its stock price at the end of year *t-1;* **AQ_{it}** *is* firm *i*'s abnormal accruals estimated using the Dechow et al. (2003) forward-looking model. Firms with higher AQ_{it} values are considered to have poorer accrual quality. For ease of exposition, the coefficient estimates for the year and industry indicators are not shown.

Table 4
Multivariate Analysis of Meeting or Beating Cash Flow and Earnings Forecasts on Initial Bond Yields

$$Yield_{it+1} = \beta_0 + \beta_1 CashBench_{it} + \beta_2 EarnBench_{it} + \beta_3 UE\_CPS_{it} + \beta_4 UE\_EPS_{it}$$
$$+ \beta_5 Sub_{it} + \beta_6 Size_{it} + \beta_7 Leverage_{it} + \beta_8 BookMkt_{it} + \beta_9 ROA_{it} + \beta_{10} StdROA_{it} + \beta_{11} StdCPS_{it}$$
$$+ \beta_{12} AQ_{it} + \beta_{13} IssueSize_{it} + \mathrm{B}_{14} Call_{it} + \beta_{15} Term_{it} + \beta_{16} RatingOrth_{it+1} + \Sigma_t \beta_t Year_{it} + \Sigma_k \beta_k FF_{it} + \nu_{it}$$

Panel A: Ordinary Least Squares Analysis (n=354)

Variable	Pred. Sign	Coef.	P-Value
CashBench	-	-0.2509	0.0073
EarnBench	-	-0.2753	0.0192
UE_CPS	-	2.0337	0.0303
UE_EPS	-	2.9038	0.3799
Sub	+	0.6782	0.0034
Size	-	-0.2388	0.0002
Leverage	+	1.6604	0.0026
BookMkt	+	8.3291	0.3733
StdROA	+	0.1201	0.2656
StdCPS	+	8.3320	0.0000
AQ	+	-0.0447	0.1569
IssueSize	?	0.1647	0.0794
Call	+	0.1959	0.0556
Term	+	-0.0018	0.3423
RatingOrth	-	-0.2415	0.0000
Adj. R^2	0.6855		

Panel B - Coefficient Difference Between CashBench and EarnBench Benchmark

Model	CashBench Coefficient	EarnBench Coefficient	Dif.	P-Value
Initial Yield	-0.2509	-0.2753	0.0245	0.8743

All p-values reported in Panel A are based on one-tailed tests except IssueSize which is two-tailed. P-Value reported in Panel B is based on two-tailed t-test.

Where **$Yield_{it+1}$** is firm *i's* yield to maturity at the issuance date minus the Treasury bond yield with a similar maturity**; CashBench** $_{it}$ is 1 if firm *i's* cash flow from operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **EarnBench** $_{it}$ is 1 if firm *i's* earnings from continuing operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **UE_CPS** $_{it}$ is firm *i's* actual cash flow per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; **UE_EPS** $_{it}$ is firm *i's* earnings from continuing operations per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; **Sub_{it}** is 1 for subordinated bonds and 0 for senior bonds; **Size** $_{it}$ is the natural log of total assets measured at the end of year *t*; **Leverage** $_{it}$ is firn *i's* long term debt divided by total assets at the end of year t; **BookMkt** $_{it}$ is the log of firn *i's* book value of equity divided by its market value of equity, both measured at the end of year *t*; **$StdROA_{it}$** is firm *i's* standard deviation of ROA calculated using five years of data from year *t-4* to *t*, where ROA is net income before extraordinary items scaled by total assets at the beginning of the year; **$StdCPS_{it}$** is firm *i's* standard deviation of cash flow from operation per share calculated using five years of data from year *t-4* to *t*. Cash flow from operations per share is defined in year t divided by its stock price at the end of year *t-1;* **AQ_{it}** *is* firm *i*'s abnormal accruals estimated using the Dechow et al. (2003) forward-looking model. Firms with higher AQ_{it} values are considered to have poorer accrual quality; **$IssueSize_{it}$** is the natural log of the offering amount (in millions of dollars) of the bonds; **$Call_{it}$** is the ratio, between 0 and 1, of the number of years to first call divided by the number of years to maturity. If there is no call provision $Call_{it}$ is 1. If the bond is callable from the date of issuance $Call_{it}$ is 0; **$Term_{it}$** is years to the maturity of the bond. **$RatingOrth_{it}$** is the residual form Equation 1. For ease of exposition, the coefficient estimates for the year and industry indicators are not shown.

Table 5

Multivariate Analysis of Meeting or Beating Cash Flow and Earnings Forecast on S&P Senior Debt Long Term Rating Changes

$$\Delta Rating_{it+1} = \beta_0 + \beta_1 CashBench_{it} + \beta_2 EarnBench_{it} + \beta_3 UE\_CPS_{it} + \beta_4 UE\_EPS_{it}$$
$$+ \beta_5 Sub_{it} + \beta_6 \Delta Size_{it} + \beta_7 \Delta Leverage_{it} + \beta_8 \Delta BookMkt_{it} + \beta_9 \Delta StdROA_{it}$$
$$+ \beta_{10} \Delta StdCPS_{it} + \beta_{11} \Delta AQ_{it} + \Sigma_t \beta_t Year_{it} + \Sigma_k \beta_k FF_{it} + \lambda_{it}$$

Panel A: Ordinary Least Squares Analysis, n = 4,181

Variable	Pred. Sign	Coefficient	P-Value
CashBench	+	0.1704	0.0124
EarnBench	+	0.2228	0.0025
UE_CPS	+	-0.1368	0.0848
UE_EPS	+	-0.2060	0.2737
sSize	+	1.0142	0.0000
Leverage	-	-4.5151	0.0000
BookMkt	-	-0.8078	0.1946
StdROA	-	-0.0010	0.3888
StdCPS	-	-3.7867	0.0000
AQ	-	-0.0877	0.1921
Generalized. R^2	0.0764		

Panel B - Coefficient Difference Between CashBench and EarnBench Benchmark

Model	CashBench Coefficient	EarnBench Coefficient	Dif.	P-Value
Initial Yield	-0.2509	-0.2753	0.0245	0.8743

Panel C – Changes in Predicted Probabilities of a Rating upgrade and Downgrade for Meeting / Beating or Missing a Cash Flow and / or Earnings Forecasts

	Meet or Beat Both (CashBench = 1 and EarnBench = 1)	Meet or Beat Cash Only (CashBench = 1)	Meet or Beat Earnings Only (EarnBench = 1)
Probability of Upgrade	3.99%	1.48%	2.11%
	Meet or Beat Both (CashBench = 1 and EarnBench = 1)	Meet or Beat Cash Only (CashBench = 1)	Meet or Beat Earnings Only (EarnBench = 1)
Probability of Downgrade	8.41%	3.12%	4.45%

P-values reported in Panel A are based on one-tailed tests. P-value reported in Panel C is based on two-tailed chi-squared test.
Where **ΔRating** is the year to year change in firm *i's* Standard & Poor's senior debt rating; **CashBench$_{it}$** is 1 if firm *i's* cash flow from operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **EarnBench$_{it}$** is 1 if firm *i's* earnings from continuing operations per share meets or beats the most recent analysts' forecasts for year t; 0 otherwise; **UE_CPS$_{it}$** is firm *i's* actual cash flow per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; **UE_EPS$_{it}$** is firm *i's* earnings from continuing operations per share in year *t* minus the most recent analysts' forecasts for year t, divided by its stock price at the end of year *t-1*; we also include year to year change for each of the following variables: **Size$_{it}$** is the natural log of total assets measured at the end of year *t*; **Leverage$_{it}$** is firn *i's* long term debt divided by total assets at the end of year t; **BookMkt$_{it}$** is log of firn *i's* book value of equity divided by its market value of equity, both measured at the end of year *t*; **StdROA$_{it}$** is firm *i's* standard deviation of ROA calculated using five years of data from year *t-4* to *t*, where ROA is net income before extraordinary items scaled by total assets at the beginning of the year; **StdCPS$_{it}$** is firm *i's* standard deviation of cash flow from operation per share calculated using five years of data from year *t-4* to *t*. Cash flow from operations per share is defined in year t divided by its stock price at the end of year *t-1*. **AQ$_{it}$** *is* firm *i*'s abnormal accruals estimated using the Dechow et al. (2003) forward-looking model. Firms with higher AQ_{it} values are considered to have poorer accrual quality. For ease of exposition, the coefficient estimates for the year and industry indicators are not shown.

4. EVIDENCE REGARDING THE ELIMINATION OF THE IFRS-U.S. GAAP RECONCILIATION

Christopher T. Edmonds, Jennifer E. Edmonds, and John J. Maher
Submitted for Publication at *Review of Quantitative Finance and Accounting*

4.1 INTRODUCTION

The SEC decision to eliminate the U.S. GAAP reconciliation requirement for foreign private issuers preparing financial statements using International Financial Accounting Standards (IFRS) has proven highly controversial among institutional investors, financial analysts, and academics (SEC 2007a,b,c; Hopkins et al. 2008). Many of these constituents assert that the SEC moved too quickly in issuing the rule to eliminate the reconciliation because significant differences continue to exist between the two reporting systems with respect to accounting for income and equity, and that the ultimate cash flow effects of these reporting differences are not readily apparent. In response to the SEC's unexpected declaration to rescind the required reconciliation, the Financial Accounting Research section (FARS) of the American Accounting Association (AAA) indicated that certain potentially important consequences of eliminating the reconciliation were not at all clear (Hopkins et al. 2008). We add to existing literature and contribute to this debate by providing empirical evidence concerning the capital market effects of the SEC's decision to eliminate the reconciliation.

Our research investigates short-window trading volume reactions to assess the value relevance of the IFRS - U.S. GAAP reconciliation.[43] This is important to investigate because it provides a partial snapshot concerning the effects of eliminating U.S. GAAP on the U.S. capital markets, and to some extent mimics the condition that will exist for all U.S. publicly traded companies in 2014 under the proposed SEC transition to IFRS. Our results indicate that trading

[43] IFRS refers to IFRS as issued by the International Accounting Standards Board (IASB).

volume around announcement dates decreased nearly 60 percent for firms that eliminated their reconciliation. A decrease in trading volume is consistent with the interpretation that information content has been lost because volume has been shown to capture disagreement among investors caused by investors' individual belief revisions (Beaver 1968; Kim and Verrecchia 1991; Bamber et al. 1999). Moreover, research has established that information triggering individual belief revisions is interpreted to be value relevant (Cready and Hurtt 2002). In conducting our analysis, we control for liquidity trading, announcement surprise, and investors' level of precision with respect to their private preannouncement information. The substantial decrease in trading volume suggests that the SEC's elimination of the reconciliation decreased the value relevance of the 20-F report for those firms that submit their financial statements using IFRS.

In additional analysis, we also compare changes in trading volume for our sample of non-reconciling companies with a control group of foreign private issuers unaffected by the SEC's rule to eliminate the reconciliation. Our control group of foreign private issuers prepares their financial statements in either their home country GAAP or U.S. GAAP, and therefore, was not affected by the change. We find that the decrease in announcement period volume is significantly greater for foreign private issuers that eliminated the reconciliation. Overall, the results are consistent with the conjecture that eliminating the reconciliation resulted in a loss of value relevant information.

The IFRS – U.S. GAAP reconciliation facilitates investors' understanding of the source of income and equity differences between the two reporting systems. Essentially, it provides investors with U.S. GAAP information not reported in IFRS. Evidence that supports the value relevance of the reconciliation indirectly supports the hypothesis that some information will be lost if the SEC permanently eliminates U.S. GAAP. In November of 2008, the SEC proposed a

roadmap that could require U.S. issuers to use IFRS as early as 2014 (SEC 2008). Additionally, the roadmap provides provisions for a limited number of U.S. issuers to elect to use IFRS as early as 2010 (SEC 2008), although the accompanying additional reporting requirements may inhibit firms from utilizing this option. Many investors have expressed concern that the SEC's roadmap is too aggressive.[44] Furthermore, the incoming chairman of the SEC, Mary Schapiro, has expressed serious concern over the proposed roadmap leading toward IFRS convergence[45]. Our results provide some insight into the capital market implications of eliminating U.S. GAAP for U.S issuers and contribute to the debate regarding the SEC's proposal to eliminate U.S. GAAP by 2014.

We contribute to existing literature by examining differential trading volume for firms that no longer reconcile to U.S. GAAP. Our results afford insight into the economic impact of the SEC's decision to eliminate the IFRS – U.S. GAAP reconciliation. We provide empirical evidence gathered at the first possible elimination date that is consistent with the interpretation that value relevant information was lost after the SEC eliminated the IFRS – U.S. GAAP reconciliation. As noted by Barth (2008), the value relevance of the reconciliation has been changing over time due to learning effects and the reality that differences between IFRS and U.S. GAAP have been decreasing over time (Blanco and Osma 2004; Henry et al. 2007). Our work provides evidence regarding the value relevance of the IFRS – U.S.GAAP reconciliation by documenting a significant decrease in publicly available information to equity investors at the first reporting period following the SEC's decision to eliminate the reconciliation.

[44] See "Ready or Not for IFRS,: WebCPA Staff, WebCPA. September 22, 2008. Available at http://www.webcpa.com/article.cfm?articleid=29264&print=yes.
[45] See "New SEC Chair May Delay SEC Roadmap," WebCPA Staff, *WebCPA*, (January 16, 2009). Available at: http://www.webcpa.com/article.cfm?articleId=30446.

The remainder of this paper is organized as follows. Section 4.2 discusses the history and progression of the global convergence process. Section 4.3 reviews the related research. Section 4.4 develops our hypothesis while Section 4.5 describes the research design. The sample selection process is described in Section 4.6 while Section 4.7 provides descriptive statistics and results. Finally, a summary including conclusions and limitations is presented in Section

4.2 BACKGROUND

In October 2002, the IASB and the FASB issued the "Norwalk Agreement," which established the boards' commitment to international convergence (FASB 2002). The goal of the convergence project was to create compatible and high quality accounting standards that could be used for both domestic and cross-border financial reporting. While significant steps have been made to eliminate differences between IFRS and U.S. GAAP, the SEC's April 2007 announcement to seek public comment on whether it should accept financial statements prepared under IFRS from non-U.S. registrants without reconciliation to U.S. GAAP surprised many investors and academics.[46] One purpose of the proposed rule change was to improve the accessibility of the U.S. public markets to foreign private issuers by removing the costs global firms incur reconciling their financial statements to U.S. GAAP (SEC 2007a). The SEC quickly moved forward with its proposal (SEC 2007a) and decided to eliminate the 20-F reconciliation requirement effective March 2008 (SEC 2007b). In response to the SEC's actions, the Financial Reporting Policy Committee of the AAA reviewed literature concerning the value relevance of the 20-F requirement and formally stated that the SEC's removal of the reconciliation requirement might be premature. The AAA response points out that significant differences

[46] "SEC Announces Next Steps Relating to International Financial Reporting Standards" (April 24, 2007). Available at: http://www.sec.gov.

continue to exist between the two sets of standards in important areas such as revenue and expense recognition (Hopkins et al. 2008).

Many countries around the world are either in the process of converging to IFRS or have already adopted IFRS. Specifically, over 100 countries around the world either require or permit the use of IFRS for financial reporting by listed companies. One of the largest financial reporting transitions occurred in 2002 when a regulation issued by the European Commission required all publicly listed firms in the European Union to adopt IFRS for fiscal years beginning on or after January 1, 2005. Other countries such as Australia, New Zealand, and Israel have also adopted IFRS as their reporting standard while Canada and Japan intend to converge with IFRS by 2011. The U.S. is also on the path to eventual convergence. In November 2008, the SEC indicated their intention to move forward with the convergence process by proposing a rule that would require U.S. issuers to use IFRS as early as 2014 (SEC 2008). The amendments set forth in the roadmap also make specific issuers eligible to take part in early adoption of IFRS by 2010 (SEC 2008). Investors and academics have expressed concern that the process is accelerating too quickly and could have negative economic ramifications.[47] Our research provides empirical evidence germane to the debate by examining equity investors' reaction to the filing of Form 20-F at the time of the SEC's removal of the IFRS – U.S. GAAP reconciliation requirement.

4.3 RELATED RESEARCH

4.3.1 Accounting and Capital Market Effects of International Accounting Standards

[47] See "Accounting for Uncertain Times: The Road to Convergence," David Lifson. The Trusted Professional (The Newspaper of the NYSSCPA). 11 (7). April 15, 2008. Available at: http://www.nysscpa.org/trustedprof/408a/tp4.htm.

Bradshaw et al. (2004) focus on U.S. institutional investment outside of the U.S. capital markets and document a preference for home-GAAP. The authors point out that the preference could be driven by reduced information costs or perceived quality of U.S. GAAP. Corvig et al. (2007) also provide evidence of a home-GAAP preference based upon their examination of firms trading outside the U.S. capital markets. Plumlee and Plumlee (2008) also document a home-GAAP preference within U.S. Capital Markets. Based on the evidence that U.S. investors have a preference for home-GAAP, the adoption of IFRS by itself is not likely to increase investors purchasing of foreign shares.

Leuz et al. (2003) examine the association between earnings management and institutional factors. Their results are consistent with Jeanjean and Stolowy (2008) and indicate that earnings quality is significantly impacted by cross-country differences in investor protection. Thus, based on this evidence, it is not likely that IFRS adoption alone will reduce the incidence of earnings management.

This is consistent with Ball (2006) who points out that differences existing between countries with respect to institutional structures are likely to result in different implementations. He expresses concern that investors might be misled by inferring that one set of standards is implemented in the same manner across countries. Henry et al. (2007) also provide evidence that the adoption of IFRS is not standard across countries, particularly with respect to shareholders equity. In summary, extant literature is reasonably consistent in emphasizing that simply adopting the same set of accounting standards is not likely to result in a common level of financial reporting quality without consideration of individual country characteristics.

4.3.2 Research Related to IFRS – U.S. GAAP Reconciliation

Prior research investigating the value relevance of IFRS – U.S. GAAP 20-F reconciliations has analyzed price and volume reactions with those studies investigating price reactions reporting mixed results. Harris and Muller (1999) investigate whether investors incorporate the information disclosed in the 20-F reconciliation into their investment decisions. They examine IAS to U.S. GAAP reconciliations filed between 1992 and 1996 and find the earnings reconciliation to be value relevant using both a market value and returns model. However, they find no relationship between earnings reconciliation per share and price per share. More recently, Henry et al. (2008) evaluate the state of convergence between IFRS and U.S. GAAP by examining the 2004-2006 reconciliations of 75 European Union companies that are cross-listed in the United States. They present evidence consistent with Harris and Muller (1999) and find the reconciliations between IFRS and U.S. GAAP to be value relevant. Chen and Sami (2008) extend this literature by investigating short window trading volume reactions around the announcement of the reconciliation information. Their sample includes IFRS – U.S. GAAP reconciliations filed between 1995 and 2004. They find that trading volume is positively related to the magnitude of the IFRS – U.S. GAAP earnings difference.

Blanco and Osma (2004) investigate the evolving comparability of IFRS and U.S. GAAP by temporally analyzing reconciliations filed during the period 1995 to 2001 and find evidence that the standards are indeed converging over this time period. In a similar vein, Henry et al. (2008) provide evidence that the average difference between IFRS and U.S. GAAP net income numbers and stockholders' equity balances declined between 2004 and 2006.

Despite evidence that IFRS and U.S. GAAP are gradually moving toward convergence, several recent studies document the continued existence of significant differences between the two reporting systems. Haverty et al. (2006) analyze the reconciliations from IFRS to U.S.

GAAP for a sample of companies from the People's Republic of China between 1996 and 2002. The authors provide evidence of significant reconciling items and document that net income is materially different (at a 5 percent materiality threshold) between IFRS and U.S. GAAP for 10 of the 11 firms. Using a larger sample of EU firms, Henry et al. (2008) present results of comparability indices indicating the continued existence of significant differences between net income and stockholders' equity as reported under U.S. GAAP and IFRS. Similarly, Plumlee and Plumlee (2008) collect and analyze the 20-Fs filed by 100 foreign private issuers during 2006 using IFRS and document significant differences in important line items such as net income and stockholders' equity between IFRS and U.S. GAAP. These differences provide support to questions raised by the FARS committee of the AAA concerning the direct comparability of financial statements prepared under IFRS and U.S. GAAP once the reconciliation is eliminated (Hopkins et al. 2008). Our research investigates the results of equity investors' actions surrounding foreign firms' filing of U.S. Form 20-F for the first year the reconciliation was eliminated. This should afford valuable insight into one segment of the capital market's reaction to the reconciliation elimination.

Following Chen and Sami (2008), we utilize a volume-based metric because of its superior ability to detect reactions around a short time window. Cready and Hurtt (2002) argue that a volume-based response is more powerful than a price-based response when conducting event studies with small sample sizes. Unlike price change, which is an aggregate market measure, trading volume measures investors' individual belief revisions (Beaver 1968; Kim and Verrecchia 1991). Prior research documents public announcements which trigger a volume reaction but no price reaction; indicating volume provides additional information beyond a price reaction (Bamber.and Cheon 1995; Kandel and Pearson 1995). Following this stream of

research, we compare volume reactions before and after the elimination of the IFRS – U.S. GAAP reconciliation[48].

4.4 HYPOTHESIS DEVELOPMENT

While prior evidence has shown that the IFRS – U.S. GAAP reconciliation has been value relevant, we empirically test whether trading volume decreased at the time of the Form 20-F filing immediately following the SEC elimination of the required reconciliation in order to determine if significant value-relevant information has been lost. We contribute to the existing literature by examining the differential effects on trading volume, and make inferences supported by the literature concerning the loss of information content due to the elimination of the U.S. GAAP reconciliation. Results from research conducted prior to 2005 are not likely to generalize to current reconciliations given that the application of IFRS was not widespread until 2005, and that the differences between IFRS and U.S. GAAP have shifted (Barth 2008). The time period of our sample encompasses a larger number of countries reporting under IFRS than previous time periods, and the reporting firms exhibit greater variety in their actual operations. Because of the increased numbers, overall familiarity with the standards is likely to have increased. Thus, it remains an empirical question as to the extent to which the IFRS – U.S. GAAP reconciliation remains value relevant at the time of the elimination period.

Prior research indicates financial reporting standards have been converging over the past decade (Henry et al. 2008; Blanco and Osma 2004). Value relevance studies that span long time periods can be driven by early observations when larger differences in the two reporting systems existed. The value relevance of the reconciliation should decrease as standards converge and

[48] We use "IFRS – U.S. GAAP reconciliation" interchangeably with the more general term "reconciliation" throughout this study.

IFRS – U.S. GAAP earnings and equity differences become smaller. Chen and Sami (2008) provide some evidence consistent with this conjecture by showing the reconciliation to be more value relevant when large IFRS – U.S. GAAP earnings differences exist.

To extend the existing literature, we investigate whether the short window trading volume decreased at the time of the 20-F filing after the SEC eliminated the required reconciliation. Investigating this period is advantageous because it provides direct evidence regarding the capital market impacts of the loss of the U.S. GAAP reconciliation. Based on prior research that has found the reconciliation value relevant, we posit the following hypothesis (in alternative form):

Hypothesis 1**:** *Announcement period trading volume will decrease for firms that eliminate the IFRS – U.S. GAAP reconciliation from their Form 20-F filing.*

This issue is important to investigate in order to obtain insight concerning the capital market effects of the proposed elimination of U.S. GAAP for all U.S. publicly traded companies that is scheduled to happen in 2014 under the proposed SEC transition timetable.

4.5 RESEARCH DESIGN

4.5.1 Levels Analysis

To investigate Hypothesis 1, we utilize a model to examine whether trading volume decreased after the elimination of the IFRS – U.S. GAAP reconciliation. Following Linsmeier et al. (2002) and Chen and Sami (2008) we implement the following model:

$$LVOL_{it} = \beta_0 + \beta_1 NOREC_{it} + \beta_2 LABSRET_{it} + \beta_3 LAVGMKTVOL_{it} + \beta_4 LPRIORVOL_{it} + \beta_5 LVOLATILITY_{it} + \beta_6 LMKTVALUE_{it} + \beta_7 LINST_{it} + \varepsilon_{it} \quad (1)$$

To adjust for skewness we use natural log transformations (L) for all continuous variables defined below[49]:

$LVOL_{it}$ = natural log of the average percentage of firm i's shares traded cumulated over either a two (t = -1 to 0) or five (t = -1 to 3) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

$NOREC_{it}$ = takes a value of 1 if the 20-F or Annual Report was filed in 2008 without a reconciliation to U.S. GAAP; 0 if the 20-F (or Annual Report, if released earlier) was filed in 2007 with a reconciliation to U.S. GAAP.

$LABSRET_{it}$ = natural log of the absolute value of the average of firm i's daily returns cumulated over either a two (t = -1 to 0) or five (t = -1 to 3) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

$LAVGMKTVOL_{it}$ = natural log of the average percentage of shares traded on the New York Stock Exchange and the American Stock Exchange cumulated over either a two (t = -1 to 0) or five (t = -1 to 3) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

$LPRIORVOL_{it}$ = natural log of the median percentage of firm i's shares traded cumulated over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

$LMKTVALUE_{it}$ = natural log of firm i's market value of equity two days (t = -2) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

$LVOLATILTY_{it}$ = natural log of firm i's standard deviation of daily returns over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

$LINST_{it}$ = natural log of firm i's institutional holdings as a percentage of shares outstanding.

[49] Bamber et al. [1999] used logarithmic transformations to adjust for skewness. Linsmeier et al. [2002] used square root transformations to adjust for skewness. VOL_{it} has a skewness of approximately 4. Taking a logarithmic transformation reduces the skewness to approximately -0.3 while a square root transformation only reduces the skewness to approximately 1.8. For this reason, we opted for logarithmic transformation. Inferences are unaffected when square root transformations are used.

Equation 1 is estimated for all foreign private issuers that prepared their 2007 and 2008 financials in accordance with IFRS as issued by the IASB or EU[50], prepared a reconciliation to U.S GAAP in 2007, and eliminated the U.S. GAAP reconciliation in 2008. Because institutional data is missing for some firms in our sample, we estimate Equation 1 separately with and without the institutional data. Model (1) includes all independent variables except LINST while Model (2) adds LINST as an additional independent variable. Following prior work, we estimate our models using a two day window consisting of the day before and the day of the announcement (t = -1 to 0). Atiase and Bamber (1994) indicate that the majority of the volume reaction occurs within this two day window. Additionally, to corroborate our results, we also estimate both models using an expanded five day window consisting of the day before to three days after the announcement (t = -1 to 3). We define the announcement date for 2007 observations as the earlier of the firm's 20-F filing date or the release date of the firm's Annual Report, if that Annual Report includes a reconciliation to U.S. GAAP. Similarly, for 2008 observations, we use the earlier of the firm's 20-F filing date or the release date of the firm's Annual Report. The primary variable of interest, NOREC, identifies changes in trading volume before and after the elimination of the reconciliation. Our main test focuses on whether the coefficient on NOREC is significantly negative, indicating that trading volume decreased in the year that the U.S. GAAP reconciliation was eliminated.

4.5.2 Changes Analysis

As a robustness check to help corroborate our results, we also conduct additional analyses to compare volume changes for foreign private issuers that eliminated the reconciliation

[50] IFRS as issued by the EU only differs in one respect to IFRS as issued by the IASB. IFRS – EU includes a carve-out exception for International Accounting Standard (IAS) 39, with regards to derivatives hedging. The exception gives firms a choice between using IAS 39 or using their own country's standard. The exception is seldom chosen, thus the majority of firms that use IFRS – EU qualify to eliminate the reconciliation (SEC 2007b).

(hereafter Elimination group) to a group of foreign private issuers that did not eliminate the reconciliation (hereafter Control group). Choosing the appropriate control group involves some degree of subjectivity by necessity, so we examine several reasonable possibilities. Firms in the Elimination group are similar in their reporting systems and environment, prepare their financial statements in IFRS as issued by the IASB, and are generally concentrated in countries in the European Union. In contrast, firms in the Control group prepare their financial statements using a variety of reporting systems (i.e. country-specific IFRS or U.S. GAAP) and have operations spread across the globe. The heterogeneity in the reporting systems and operating environments of foreign private issuers that did not eliminate the reconciliation may bias coefficient estimates in pooled crossectional regressions. To help alleviate this possibility, and to control for differences in reporting systems, we estimate Equation 2 (below) using three different control groups: 1) foreign private issuers that prepared their financial statements in U.S. GAAP in both 2007 and 2008; 2) foreign private issuers that prepared their financial statements in their home country GAAP and provided reconciliation to U.S. GAAP in both 2007 and 2008; 3) all foreign private issuers that were unaffected by the SEC's decision to eliminate the reconciliation (i.e. Groups 1 and 2 combined). All inferences drawn from estimating Equation 2 for these different groupings are similar irrespective of the control group chosen. For this reason, only results for the combined sample (i.e. Control Group 3) are reported in the tables.

To investigate whether announcement period trading volume decreased significantly more for the firms in the Elimination group than firms in the Control group we compare

percentage changes, before and after the elimination of the reconciliation, for the variables previously utilized in Equation 1. Specifically, we implement the following changes model[51].

$$\begin{aligned}\%\Delta LVOL_i = {} & \beta_0 + \beta_1 ELIMINATION_i + \beta_2 \%\Delta LABSRET_i + \beta_3 \%\Delta LAVGMKTVOL_i \\ & + \%\Delta\beta_4 LPRIORVOL_i + \beta_5 \%\Delta LVOLATILITY_i \\ & + \beta_6 \%\Delta LMKTVALUE_i + \beta_7 \%\Delta LINST_i + \omega_i\end{aligned} \quad (2)$$

Where:

$\%\Delta LVOL_i$ = is the percentage change in LVOL for firm i from 2007 to 2008.

ELIMINATION = is equal to1 if the foreign private issuer reconciled their financials to U.S. GAAP in 2007 and then eliminated the U.S. GAAP reconciliation in 2008; 0 if the foreign private issuer was unaffected by the SEC rule to eliminate the reconciliation.

$\%\Delta LABSRET_i$ = percentage change in LABSRET for firm *i* from 2007 to 2008.

$\%\Delta LAVGMKTVOL_i$ = percentage change in LAVGMKTVOL for firm *i* from 2007 to 2008.

$\%\Delta LPRIORVOL_i$ = percentage change in LPRIORVOL for firm *i* from 2007 to 2008.

$\%\Delta LMKTVALUE_i$ = percentage change in LMKTVALUE for firm *i* from 2007 to 2008.

$\%\Delta LVOLATILITY_i$ = percentage change in LVOLATILITY for firm *i* from 2007 to 2008.

$\%\Delta INST_i$ = is the percentage change in INST for firm *i* from 2007 to 2008.

Equation 2 is estimated over all foreign private issuers that file a 20-F report in 2007 and 2008. We estimate Equation 2 separately with and without the market value and institutional data because this data is not available for some firms in our sample. This provides three additional models to estimate. Model (3) includes all independent variables except

[51] We use percentage changes instead of raw changes because foreign private issuers affected by the SEC's rule to eliminate the U.S. GAAP reconciliation have significantly different characteristics than foreign private issuers unaffected by the SEC's rule. We discuss these differences further in the Descriptive Statistics section.

LMKTVALUE and LINST. Model (4) includes all independent variables except LINST. Model (5) includes all independent variables. Similar to Equation 1, we estimate Equation 2 over two and five day windows around the announcement.

The primary variable of interest for this portion of our research, ELIMINATION, captures the relative difference in changes in trading volume between the Elimination and Control groups. Our primary test focuses on whether the coefficient on ELIMINATION is significantly negative, which would indicate that trading volume decreased significantly more for foreign private issuers in the Elimination group than for foreign private issuers in the control group. This finding would be consistent with a significant loss of information to the market occurring for these firms due to the elimination of the GAAP reconciliation.

4.5.3 Dependent Variable

We examine the value relevance of the reconciliation by using unadjusted trading volume as our dependent variable. Our dependent variable, LVOL, is the natural log of the average percentage of outstanding shares, or American Depository Receipts (ADRs), traded over either a two or five day window[52]. While some studies in alternative settings have used a market and/or firm adjusted volume metric, an unadjusted trading volume is more appropriate in our setting as described below. Our approach is similar to that utilized by Linsmeier et al. (2002). Given our pre/post research design, to the extent that market and/or firm adjusted volume are unrelated to the firm's announcement day volume, error will be introduced into the dependent variable if a market or firm adjusted volume metric is utilized. For example, if we were to use a market adjusted volume metric, our independent variable of interest, NOREC, would pick up pre/post changes in market volume as well as pre/post changes in the firm's announcement day volume. Our goal is to isolate pre/post changes in the firm's announcement day volume. Therefore, we

[52] Foreign private issuers typically trade as American Depository Receipts (ADRs) in the U.S. markets.

utilize an unadjusted volume metric and then include two additional independent control variables. The first variable captures the NYSE/AMEX market volume at the time of the announcement, and the second captures the firm's non-announcement period volume. In this manner, we isolate the metric of interest while controlling for other volume constructs.

4.5.4 Independent Control Variables

We control for other sources of trading volume around the announcement window using independent variables common to the trading volume literature. Following prior work (Bamber et al. 1997; Linsmeier et al. 2002, Chen and Sami 2008), we capture the surprise of the announcement using the absolute value of firm i's average return for the two or five day window around the announcement, LABSRET. As shown in Kim and Verrecchia (1991) and Bamber and Atiase (1994) trading volume is positively related to the absolute value of the price change around a public announcement. Accordingly, we expect a positive relation between LABSRET and trading volume.

Trading volume in response to an announcement can be confounded by contemporaneous macroeconomic events. While many studies in the literature control for these events by using a market adjusted volume metric, this would introduce unnecessary error into our dependent variable, as described previously, and is not appropriate in this context. Thus, we follow Linsmeier et al. (2002) in controlling for contemporaneous macroeconomic events, and include a market volume metric as an independent variable. Our metric, LAVGMKTVOL, is the average percentage of shares traded on the New York Stock Exchange and the American Stock Exchange for either the two (t = -1 to 0) or five (t = -1 to 3) day window around the announcement. We expect LAVGMKTVOL to be positively related to our dependent variable.

Investors also trade for liquidity reasons unrelated to the announcement (Benston and Hagerman 1974; Petersen and Fialkowski 1994). To control for liquidity trading we include LPRIORVOL, defined as firm i's median trading volume for the fifty days prior (t = -54 to -5) to the announcement[53]. We expect LPRIORVOL to be positively related to our dependent variable.

Large and small firms often have different information environments. Large firms are generally covered by more analysts and generate greater media coverage than small firms in periods prior to the announcement. Given a greater amount of information available for large firms, they generally trigger less of a reaction during the announcement window. To help control for this phenomenon, we include a size variable to proxy for each firm's information environment. LMKTVALUE is defined as firm i's market value of equity two days prior to the announcement. Studies investigating trading volume reactions have documented a negative relation between firm size and trading volume around a public announcement (Atiase 1985, Atiase 1987, Bamber 1987, Chen and Sami 2008). Based on this prior work, we expect LMKTVALUE to be negatively related to our dependent variable.

Prior research suggests that when investors disagree about future prices, trading volume around an announcement increases (Kim and Verrecchia 1991; Bamber and Atiase 1994; Bamber et. al. 1997). Many studies use dispersion in analysts' forecasts in the month prior to the announcement to capture this disagreement. Since analysts' forecast data is unavailable for many firms in our sample, we follow Chen and Sami (2008) by using return volatility prior to the announcement to capture this disagreement construct. We expect LVOLATILITY to be positively related to our dependent variable.

[53] We use median prior volume because Bamber et al. (1997) argue that mean non-announcement volume is susceptible to bias due to large irregular increases in daily volume.

Finally, to capture differences in the precision of investors' pre-announcement private information, we use firm i's institutional holdings as a percentage of total shares outstanding (LINST). Kim and Verrecchia (1991) argue that the trading volume reaction to a public announcement is directionally related to the precision of investors' private pre-announcement information. Professional institutional investors differ from non-professional investors with respect to the precision of their private information. These differences create heterogenous beliefs which increase trading volume around a public announcement. Utama and Cready (1997) provide evidence that trading volume reactions are increasing in the level of institutional holdings[54]. We therefore expect LINST to be positively related to our dependent variable.

4.6 SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

4.6.1 Sample Development

We hand collected the announcement dates off the SEC website by searching 20-F reports filed in 2008, and followed up by searching the SEC website to find the firm's 2007 20-F filing date, if one exists. We crosschecked the filing date with the announcement date of the firm's annual report by searching 6-k filings, company websites, and when necessary, using Google. We collected trading volume and return data from The Center for Research in Security Prices (CRSP) and institutional holdings data from Thomson Reuters.

Our sample consists of all foreign private issuers that filed a 20-F report with the Securities and Exchange Commission (SEC) in 2007 and in 2008. A firm must have a 20-F filing for both 2007 and 2008 to be included in the sample. In addition, firms must file their 2008 filing before August 1, 2008. Our sample is restricted to firms that filed before August 1st for two

[54] Utama and Cready (1997) provide evidence that the relationship between institutional holdings and volume around an announcement is actually quadratic. Since we take the natural log of INST, we leave off the quadratic term. Using INST instead of LINST and adding the quadratic term does not affect any of our inferences.

practical reasons. First, at the time of sample development, volume and return data were not available on CRSP for observations taken after August 1, 2008. Second, because of the extreme volatility brought on by market conditions during the last five months of 2008, it might be difficult to draw reliable inferences from observations taken after August 1, 2008[55]. Additionally, we limit the sample to firms traded on the New York Stock Exchange, American Stock Exchange, or the National Association of Securities Dealers Automated Quotations (NASDAQ) over the counter market. These restrictions yield a sample of 187 firms and 374 firm year observations[56].

We divide this sample into two groups. The first group (Elimination group) consists of 69 firms (138 firm year observations) that prepare their 2007 and 2008 financials in accordance with IFRS as issued by the IASB or EU, prepare a reconciliation to U.S GAAP in 2007, and eliminate the U.S. GAAP reconciliation in 2008. The levels model (Equation 1, Models 1 and 2) compares differences in trading volume before and after the elimination of the reconciliation within the Elimination group.

The second group (Control group) consists of firms that were unaffected by the SEC's rule to eliminate the reconciliation. Firms in the Control group are pooled with firms in the Elimination group to conduct our changes model regressions (Equation 2, Models 3, 4, and 5). Since it requires two observations to calculate each of the variables in Models 3, 4, and 5, the changes model utilizes a sample of 187 firm observations.

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[55] Stocks were extremely volatile during the last quarter of 2008. In October, The Dow Jones Industrial Average had two of the six largest one day percentage gains in its 113 year history. Additionally, the Dow suffered four of the twenty largest one day percentage declines in the last four months of 2008. See "After the Collapse, Guarded Hope for '09," E.S Browning, *The Wall Street Journal*, January 2, 2009, p. R1, R6.

[56] As an additional check, we cross checked our sample against Ciesielski's (2007) sample of 130 foreign private issuers that were expected to eliminate the reconciliation. Firms missing from our sample either 1) filed after August 1, 2008, 2) did not trade on the NYSE, AMEX, or NASDAQ, 3) did not file a 2007 20-F, 4) were missing CRSP data for either 2007 or 2008, or 4) provided a voluntary U.S. GAAP reconciliation in 2008. Two firms, Pearson PLC and Signet Group PLC both provided a voluntarily reconciliation to U.S. GAAP in 2008.

Some firms are missing market value and institutional holdings data required to run Models 2, 4, and 5. If a firm is missing data in one year but not the other, both observations are deleted. Table 1 summarizes the sample selection process for both the levels model (Panel A) and the changes model (Panel B).

[TABLE 1 HERE]

4.6.2 Descriptive Statistics

A variety of differences exist between firms in the Elimination and Control groups, as we discussed previously. We now describe these differences related to the country of incorporation, firm industry, and model variables. Table 2 lists the country of incorporation for the Elimination group and the Control group. Columns A (Elimination group) and B (Control group) list the percent and frequency of firms that incorporate in each country while Column C displays the combined totals for our sample.

The Elimination group (Column A) consists mainly of firms incorporated in European Union countries, with 9.6, 13.2, and 13.2 percent of the firms incorporated in England, France, and the UK respectively. The majority of firms in the Elimination group prepared their financial statements in accordance with IFRS as issued by the European Union or, as issued by the IASB in 2007, which qualified them to eliminate the U.S. GAAP reconciliation in 2008. The Control group of firms (Column B) has fairly wide international representation, with the three most prevalent countries of incorporation being the Cayman Islands (13.9 percent), Japan (10.1 percent), and the State of Israel (24 percent). The majority of the Cayman Island firms conduct

business in Asia. The majority of the Israeli firms prepared both their 2007 and 2008 financials in accordance with U.S. GAAP.

[TABLE 2 HERE]

Table 3 provides a listing of industry classifications (2-digit SIC) for firms in each of the Elimination and Control groups. Overall, forty-four percent of the foreign private issuers are manufacturing firms. The Elimination group has a higher percentage of firms in the finance, insurance, and real estate category (18% versus 4%), whereas the Control group has a higher percentage of firms in the service industry (20% versus 3%).

[TABLE 3 HERE]

Table 4 provides descriptive statistics for the variables used in our primary analysis. Panel A provides statistics for the Elimination group and Panel B provides statistics for the Control group with statistically significant mean differences indicated as appropriate. VOL is significantly lower for firms in the Elimination group (.0109 versus .0146) demonstrating from a simple univariate perspective that these firms trade less around the announcement of their 20-F or Annual Report. The Elimination group also typically experiences smaller absolute returns (ABSRET) (.0115 versus.0171), less VOLATILITY (.0218 versus.0296) and smaller levels of institutional holdings (INST) (.0727 versus .1924) than the Control group. Firms in the Elimination group have, on average, a larger market value (MKTVALUE) than firms in the Control group (8,620 versus 1,779 in millions of dollars). There is no statistical difference in PRIORVOL between the two groups; indicating that on non-announcement days, firms within the two groups typically experience relatively equal levels of trading volume. Also, as expected, there is no significant difference in market volume around the announcement (AVGMKTVOL).

4.7 RESULTS

Correlations

Panel A of Table 5 provides a correlation matrix for all variables utilized in Models 1 and 2 with Pearson (Spearman) correlation coefficients given below (above) the diagonal. Many variables in the model are highly correlated with our variable of interest, NOREC. However, further diagnostic tests indicate that multicollinearity should not present a significant problem when running our regressions and interpreting coefficients.[57] The high correlations between NOREC and LAVGMKTVOL, and NOREC and PRIORVOL (Spearman correlation coefficients of .84933 and .28806 respectively) are noteworthy. This is consistent with NOREC identifying changes from 2007 to 2008 in LAVGMKTVOL and PRIORVOL. As previously discussed, if we were to use a market or firm-specific volume adjusted metric as our dependent variable, then NOREC will pick up changes in these LAVGMKTVOL and PRIORVOL, as well as changes in firm i's announcement period volume. This would negatively affect our ability to isolate the change in volume caused primarily by the elimination of the reconciliation. This reinforces our prior design choice of using unadjusted volume as our dependent variable and including LAVGMKTVOL and PRIORVOL as independent control variables.

[TABLE 5 HERE]

Table 5 Panel B provides a correlation matrix for all variables utilized in estimating Equation 2. Correlations between the variable of interest, ELIMINATION, and other independent variables are not as high as in Panel A,[58] but all independent variables, except %ΔLMKTVALUE, are significantly correlated with the ELIMINATION variable. Overall,

[57] All variance inflation factors are less than 10 indicating multicollinearity remains at a level that should not affect our inferences. The variance inflation factor on our primary variable of interest, NOREC, is less than 3.
[58] All variance inflation factors are close to 1 indicating that multicollinearity is not problematic.

nothing is revealed in Table 5 that would interfere with running our regressions and making reasonable inferences with respect to our variables of interest.

Levels Model Results

Our first multivariate test utilizes a levels analysis and focuses exclusively on the Elimination group to compare the trading volume of firms from one year to the next surrounding the filing date of the 20-F (or annual report). Our variable of interest, NOREC, affords a comparison of the volume at the announcement date in the year the SEC eliminated the IFRS-U.S. GAAP 20-F reconciliation to the corresponding announcement date in the previous year. Table 6 provides regression results for the two day window (t = -1 to 0) around the announcement date[59]. Model 1 (2) has an adjusted R^2 of .8114 (.8202) indicating a robust model that explains the majority of the variance in LVOL. Importantly, in both models, the coefficient on NOREC is significantly negative. Model 1 (2) indicates that trading volume around the announcement decreased by 59.64 (60.25) percent in 2008, the year in which the U.S. GAAP reconciliation was eliminated[60]. These results provide support for our hypothesis that trading volume around the announcement date decreases in the year that the reconciliation is eliminated which is consistent with a loss of information occurring to equity investors.[61]

With respect to our control variables, LABSRET, LAVGMKTVOL, and LPRIORVOL are all positive and significant, as expected. Similar to results reported in Chen and Sami (2008), LVOLATILITY is not significantly different from zero[62]. The signs on the last two variables,

[59] The Chi-square statistic for testing for first and second moment specification is 22.5 and insignificant (p = .9344); consistent with the error terms being independent and identically distributed. Given that errors are homoscedastic we do not adjust standard errors for heteroscedasticity.

[60] In an untabulated analysis, we also estimate equation 1 (models 1 and 2) over our control group. The coefficient on NOREC was not significantly different from zero. We investigate differences between the Elimination and control group directly in the next section of the paper.

[61] As a sensitivity test, we also re-estimate equation 1using a 5-day window. The results and all inferences remain the same as reported here for the 2-day window.

[62] Eliminating LVOLATILITY from Models 1 and 2 does not change any reported results.

LMKTVALUE and LINST, are not as expected. Eliminating these variables from Models 1 and 2 does not change any of the inferences drawn on the NOREC coefficient.

[TABLE 6 HERE]

Changes Model Results

To further corroborate our results, we utilize a changes model in our second tests (Equation 2) to directly compare the percentage changes occurring in the Elimination group to percentage changes in the Control group. Table 7 provides regression results for the two day window (t = -1 to 0) around the announcement[63] for the three models and indicates satisfactory overall R^2s for our changes specification (.3074, .3381, and .3273 respectively). The independent control variables in all models have the expected sign and are consistent with prior research. The coefficient on our variable of interest, ELIMINATION, in Model 3 is negative and marginally significant, while in Models 4 and 5 ELIMINATION remains negative and is significant at more conventional levels. Overall, the results are consistent with the Elimination group experiencing a significantly greater decrease in relative trading volume than the Control group.[64] These results provide further support for our hypothesis that trading volume around the announcement date decreased in the year that the reconciliation is eliminated, and is consistent with a loss of information available to equity investors at the 20-F (or annual report) filing date.

[TABLE 7 HERE]

4.8 CONTRIBUTIONS AND LIMITATIONS

[63] The Chi-square statistic for testing for first and second moment specification is 26.61 and insignificant (p = .4299). Thus, following the same logic described previously in Footnote 17, we do not need to adjust standard errors for heteroscedasticity.

[64] We also estimate Equation 2 using a 5-day window. All inferences remain unchanged from the 2-day window.

Overall, our results support the hypothesis that trading volume decreased after the elimination of the IFRS – U.S. GAAP reconciliation and are consistent with a significant loss in value-relevant information available to equity investors. After controlling for macroeconomic events, liquidity trading, announcement surprise, and the level of investors' private preannouncement precision, our results indicate that trading volume decreased nearly 60 percent in the year the reconciliation was eliminated. We also compare changes in trading volume with a control group of foreign private issuers unaffected by the SEC's rule to eliminate the reconciliation and find the decrease in announcement period volume to be significantly greater for foreign private issuers that eliminated the reconciliation. Based on our findings, we conclude that the SEC's decision to eliminate the 20-F reconciliation for foreign private issuers resulted in a loss of value relevant information. Our results are consistent with prior research (Chen and Sami 2008; Henry et al. 2008; Harris and Muller 1999) that found the reconciliation to be value relevant. We add to existing research by providing empirical evidence on the capital market effects of eliminating the IFRS – U.S. GAAP reconciliation.

Our results are based on data captured at the first filing date of Form 20-F (or annual report) available after the SEC's decision to eliminate the reconciliation of IFRS to U.S. GAAP. This should provide some insight into the capital market effects of eliminating U.S. GAAP for U.S issuers. Our finding that the reconciliation remains value relevant supports the hypothesis that U.S. GAAP provides value relevant information above and beyond IFRS. However, it is still possible that the value relevance of the 20-F reconciliation is attributable to learning effects (i.e. U.S. investors are not familiar enough with IFRS to interpret financial statements prepared under IFRS), and as U.S. investors learn IFRS, the reconciliation will become less value relevant. Future research should further explore whether learning effects drive the value relevance of the

reconciliation or whether U.S. GAAP provides additional value relevant information above and beyond IFRS.

One of the necessary limitations of our study is the selection of the control group. Firms in the control group prepare their financials using a variety of reporting systems (i.e. country specific IFRS or U.S. GAAP) and have operations spread across the globe. Our inability to control for all of these differences may bias coefficient estimates in pooled crossectional regressions. Additionally, we must caution that we provide only initial evidence given that our inferences are based on only two years of data. As countries continue to adopt IFRS, more firms will be eligible to eliminate the reconciliation. Future research can further investigate the economic consequences of the SEC's decision to eliminate the reconciliation as more data becomes available. Understanding the information that is lost when the reconciliation is eliminated provides insight into the informational differences between IFRS and U.S. GAAP. This area of research is critical for external financial reporting and the U.S. capital markets given the SEC's current proposal that would require adoption of IFRS for all U.S. issuers by 2014.

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Table 1

Sample Selection

Panel A - Sample selection for levels model		
	Total Firms	Total Observations
All foreign private issuers that filed their 20-F report before August 1, 2008, reconciled financials to US GAAP in 2007 and eliminated the reconciliation in 2008	69	138
Less data unavailable on CRSP	(1)	(2)
Total firm-year observations used to estimate Model 1	68	136
Less institutional data unavailable on Thomson Reuters	(4)	(8)
Total firm-year observations used to estimate Model 2	64	128

Panel B - Sample selection for changes model	
All foreign private issuers that filed their 20-F report before August 1, 2008 and also filed a 20-F report in 2007	Total Firms and Observations
Total firm-year observations used to estimate Model 3	187
Less data unavailable on CRSP	(3)
Total firm-year observations used to estimate Model 4	184
Less institutional data unavailable on Thomson Reuters	(14)
Total firm-year observations used to estimate Model 5	170

Table 2
Country of Incorporation

	Elimination Group		Control Group		Total	
Country	Freq.	Percent	Freq.	Percent	Freq.	Percent
Belgium	2	1.5%	0	0.0%	2	0.5%
Bermuda	2	1.5%	7	2.9%	9	2.4%
British Virgin Islands	0	0.0%	8	3.4%	8	2.1%
Canada	0	0.0%	8	3.4%	8	2.1%
Cayman Islands	0	0.0%	33	13.9%	33	8.8%
Commonwealth of Australia	1	0.7%	0	0.0%	1	0.3%
England	13	9.6%	2	0.8%	15	4.0%
Federative Republic of Brazil	0	0.0%	4	1.7%	4	1.1%
Federal Republic of Germany	9	6.6%	6	2.5%	15	4.0%
Grand Duchy of Luxembourg	4	2.9%	3	1.3%	7	1.9%
Hong Kong, China	0	0.0%	2	0.8%	2	0.5%
Hungary	2	1.5%	0	0.0%	2	0.5%
Japan	0	0.0%	24	10.1%	24	6.4%
Jersey, Chanel Islands	2	1.5%	0	0.0%	2	0.5%
Kingdom of Denmark	2	1.5%	0	0.0%	2	0.5%
Kingdom of Spain	4	2.9%	0	0.0%	4	1.1%
Kingdom of Sweden	2	1.5%	0	0.0%	2	0.5%
Liberia	0	0.0%	1	0.4%	1	0.3%
Netherlands	11	8.1%	7	2.9%	18	4.8%
Netherlands Antilles	0	0.0%	1	0.4%	1	0.3%
Papua New Guinea	2	1.5%	0	0.0%	2	0.5%
People's Republic of China	14	10.3%	5	2.1%	19	5.1%
Republic of Argentina	0	0.0%	4	1.7%	4	1.1%
Republic of Chile	0	0.0%	8	3.4%	8	2.1%
Republic of Indonesia	0	0.0%	2	0.8%	2	0.5%
Republic of Ireland	8	5.9%	4	1.7%	12	3.2%
Republic of Italy	4	2.9%	0	0.0%	4	1.1%
Republic of Marshall Islands	0	0.0%	14	5.9%	14	3.7%
Republic of Singapore	0	0.0%	2	0.8%	2	0.5%
Republic of South Africa	2	1.5%	2	0.8%	4	1.1%
Republic of Turkey	2	1.5%	0	0.0%	2	0.5%
Republic on Finland	2	1.5%	0	0.0%	2	0.5%
Russian Federation	0	0.0%	6	2.5%	6	1.6%
Scotland	2	1.5%	0	0.0%	2	0.5%
State of Israel	0	0.0%	57	24.0%	57	15.2%
Switzerland	6	4.4%	4	1.7%	10	2.7%
Taiwan Republic of China	0	0.0%	8	3.4%	8	2.1%
The Hellenic Republic	0	0.0%	4	1.7%	4	1.1%
The Portuguese Republic	2	1.5%	0	0.0%	2	0.5%
The Republic of France	18	13.2%	4	1.7%	22	5.9%
The Republic of Korea	0	0.0%	2	0.8%	2	0.5%
The United Mexican States	2	1.5%	4	1.7%	6	1.6%
UK	18	13.2%	0	0.0%	18	4.8%
West Indies	0	0.0%	2	0.8%	2	0.5%
Total	136	100%	238	100%	374	100%

The Elimination Group includes all foreign private issuer observations that filed their 20-F report before August 1, 2008, reconciled financials to US GAAP in 2007 and eliminated the reconciliation in 2008
The Control Group includes all foreign private issuer observations that were unaffected by the SEC rule to eliminate the reconciliation.

Table 3

Industry Classification By Group

Industry	A Elimination Group		B Control Group		C Total	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Agriculture, Forestry, and Fisheries	0	0%	3	3%	3	2%
Mineral Industries	10	15%	6	5%	16	9%
Construction	0	0%	0	0%	1	1%
Manufacturing	26	38%	57	48%	83	44%
Transportation, Communications, Electric, Gas, and Sanitary Services	17	25%	20	17%	37	20%
Wholesale Trade	0	0%	2	2%	2	1%
Retail Trade	1	1%	1	1%	2	1%
Finance, Insurance, and Real Estate	12	18%	5	4%	17	9%
Services	2	3%	24	20%	26	14%
Total	68	100%	119	100%	187	100%

The Elimination Group includes all foreign private issuers that filed their 20-F report before August 1, 2008, reconciled financials to US GAAP in 2007 and eliminated the reconciliation in 2008.
The Control Group includes all foreign private issuer observations that were unaffected by the SEC rule to eliminate the reconciliation.
Industry classification is based on each firm's 2 digit SIC code.

Table 4

Descriptive Statistics - Elimination and Control Group

Panel A: Elimination Group

Variable	n	Mean	Compared to Panel B	Std Dev	Lower Quartile	Median	Upper Quartile
VOL	136	0.0109	**	0.0122	0.0036	0.0061	0.0152
PRIORVOL	136	0.0097		0.0110	0.0034	0.0057	0.0132
AVGMKTVOL	136	0.0091		0.0021	0.0074	0.0089	0.0099
ABSRET	136	0.0115	***	0.0115	0.0030	0.0071	0.0170
MKTVALUE	136	8620	***	18676	607	1892	5487
VOLATILITY	136	0.0218	***	0.0090	0.0036	0.0198	0.0152
INST	128	0.0727	***	0.1154	0.0071	0.0246	0.0859

Panel B: Control Group

Variable	n	Mean	Compared to Panel A	Std Dev	Lower Quartile	Median	Upper Quartile
VOL	240	0.0146	**	0.0251	0.0021	0.0065	0.0149
PRIORVOL	240	0.0116		0.0218	0.0022	0.0056	0.0109
AVGMKTVOL	240	0.0094		0.0025	0.0074	0.0090	0.0114
ABSRET	240	0.0171	***	0.0190	0.0046	0.0107	0.0226
MKTVALUE	232	1779	***	4675	106	428	1263
VOLATILITY	240	0.0296	***	0.0148	0.0191	0.1070	0.0355
INST	220	0.1924	***	0.2066	0.0250	0.1061	0.3095

All two-tailed Satterthwaite t-tests for unequal variances

*** significant at .01, ** significant at .05, * significant at .1

VOL is the average percentage of firm i's shares traded cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

PRIORVOL is the median percentage of firm i's shares traded cumulated over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

AVGMKTVOL is the average percentage of shares traded on the New York Stock Exchange and the American Stock Exchange cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

ABSRET is the absolute value of the average of firm i's daily returns cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

MKTVALUE is firm i's market value of equity (in millions) two days (t = -2) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

VOLATILITY is firm i's standard deviation of daily returns over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

INST is firm i's institutional holdings as a percentage of shares outstanding.

Table 5

Correlation Matrix

Panel A: Levels Model

Pearson (below diagonal) / Spearman (above diagonal) Correlation Coefficients

	n = 136 LVOL	n = 136 NOREC	n = 136 LABSRET	n=136 LAVGMKTVOL	n = 136 LPRIORVOL	n = 136 LMKTVALUE	n = 136 LVOLATILITY	n = 128 LINST
LVOL		0.21014**	0.18167**	0.24957***	0.83931***	-0.09988	0.38815***	-0.2357***
NOREC	0.2349***		0.17793**	0.84933***	0.28806***	-0.02285	0.58773***	0.05667
LABSRET	0.2104**	0.14703*		0.26762***	0.05543	-0.06949	0.23757***	0.01348
LAVGMKTVOL	0.26096***	0.8144***	0.22926***		0.21388**	-0.01993	0.47892***	0.03037
LPRIORVOL	0.87843***	0.2854***	0.09674	0.1904**		-0.14372*	0.47802***	-0.21299**
LMKTVALUE	-0.18118**	-0.02698	-0.05415	-0.02979	-0.2661***		-0.35202***	0.38786***
LVOLATILITY	0.39176***	0.5761***	0.24523***	0.44502***	0.44329***	-0.36366***		-0.08405
LINST	-0.18579**	0.08432	-0.04972	0.03509	-0.11149	0.257***	-0.07703	

*** significant at .01, ** significant at .05, * significant at .1

This sample includes all foreign private issuers that filed their 20-F report before August 1, 2008, reconciled financials to US GAAP in 2007 and eliminated the reconciliation in 2008.

The dependent variable, LVOL, is the natural log of the average percentage of firm i's shares traded cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

NOREC is 1 if the 20-F or Annual Report was filed in 2008 without a reconciliation to U.S. GAAP; 0 if the 20-F or Annual Report was filed in 2007 with a reconciliation to U.S. GAAP.

LABSRET is the natural log of the absolute value of the average of firm i's daily returns cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

LAVGMKTVOL is the natural log of the average percentage of shares traded on the New York Stock Exchange and the American Stock Exchange cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

LPRIORVOL is the natural log of the median percentage of firm i's shares traded cumulated over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

LVOLATILITY is the natural log of firm i's standard deviation of daily returns over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

LMKTVALUE is the natural log of firm i's market value of equity two days (t = -2) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

LINST is the natural log of firm i's institutional holdings as a percentage of shares outstanding.

Panel B: Changes Model

Pearson (below diagonal) / Spearman (above diagonal) Correlation Coefficients

	n = 187	n = 187	n = 187	n=187	n = 187	n = 184	n = 187	n = 170
	%Δ LVOL	ELIMINATION	%Δ LABSRET	%Δ LAVGMKTVOL	%Δ LPRIORVOL	%Δ LMKTVALUE	%Δ LVOLATILITY	%Δ LINST
%Δ_LVOL		-0.05045	0.21448***	0.07772	0.45915***	0.05369	0.18251**	0.01381
ELIMINATION	-0.1867**		-0.311***	0.17423**	-0.07187	-0.03053	-0.66928***	-0.1587**
%ΔLABSRET	0.08314	-0.28811***		-0.00228	-0.04518	-0.03588	0.17485**	-0.09246
%ΔLAVGMKTVOL	-0.02147	0.18595**	-0.0427		0.19779***	0.09366	-0.00835	-0.04212
%ΔLPRIORVOL	0.2500***	-0.19978***	0.02773	0.12805		0.28284***	0.33372***	0.10766
%ΔLMKTVALUE	0.0262	0.00413	-0.02655	0.16834**	0.31644***		0.08605	0.217***
%ΔLVOLATILITY	0.2113***	-0.56039***	0.1146	-0.02082	0.27028***	-0.00397		0.2269***
%ΔLINST	0.2018***	-0.22092***	0.11551	-0.00686	0.37665***	0.2964***	0.17678**	

This sample includes all foreign private issuers that filed their 20-F report before August 1, 2008 and also filed a 20-F report in 2007.
The dependent variable, %ΔLVOL, is the percentage change in LVOL from 2007 to 2008.
ELIMINATION is 1 if the foreign private issuer reconciled their financials to U.S. GAAP in 2007 and then eliminated the U.S. GAAP reconciliation in 2008; 0 if the foreign private issuer was unaffected by the SEC rule to eliminate the reconciliation.
%ΔLABSRET is the percentage change in LABSRET from 2007 to 2008.
%ΔLPRIORVOL is the percentage change in LPRIORVOL from 2007 to 2008.
%ΔLAVGMKTVOL is the percentage change in LAVGMKTVOL from 2007 to 2008.
%ΔLVOLATILITY is the percentage change in LVOLATILITY form 2007 to 2008.
%ΔLMKTVALUE is the percentage change in LMKTVALUE from 2007 to 2008.
%ΔLINST is the percentage change in LINST from 2007 to 2008.
Where: LVOL is the natural log of the average percentage of firm i's shares traded cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier. LABSRET is the natural log of the absolute value of the average of firm i's daily returns cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier. LAVGMKTVOL is the natural log of the average percentage of shares traded on the New York Stock Exchange and the American Stock Exchange cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier. LPRIORVOL is the natural log of the median percentage of firm i's shares traded cumulated over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier. LVOLATILITY is the natural log of firm i's standard deviation of daily returns over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier. LMKTVALUE is the natural log of firm i's market value of equity two days (t = -2) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier. LINST is the natural log of firm i's institutional holdings as a percentage of shares outstanding.

Table 6

Regression Analysis - Levels Model - 2 Day Window

All Foreign Private Issuers that Eliminated the U.S. GAAP Reconciliation

$$LVOL_{it} = \beta_0 + \beta_1 NOREC_{it} + \beta_2 LABSRET_{it} + \beta_3 LAVGMKTVOL_{it} + \beta_4 LPRIORVOL_{it} + \beta_5 LVOLATILITY_{it} + \beta_6 LMKTVALUE_{it} + \beta_7 LINST_{it} + \varepsilon_{it}$$

		Model Coefficient over [t-value]	
Variable	Predicted Sign	1	2
Intercept		6.9486 [4.29]	6.80074 [4.01]
NOREC	-	-0.5964 [-4.01]	-0.60253 [-3.86]
LABSRET	+	0.07264 [2.40]	0.07231 [2.35]
LAVGMKTVOL	+	1.38301 [4.43]	1.42339 [4.41]
LPRIORVOL	+	0.93225 [21.35]	0.92721 [20.97]
LVOLATILITY	+	0.08739 [0.66]	0.0822 [0.60]
LMKTVALUE	-	0.04451 [1.86]	0.06039 [2.44]
LINST	+		-0.04579 [-2.32]
n		136	128
Adj. R^2		0.8114	0.8202

This sample includes all foreign private issuers that filed their 20-F report before August 1, 2008, reconciled financials to US GAAP in 2007 and eliminated the reconciliation in 2008.

The dependent variable, LVOL, is the natural log of the average percentage of firm i's shares traded cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

NOREC is 1 if the 20-F or Annual Report was filed in 2008 without a reconciliation to U.S. GAAP; 0 if the 20-F or Annual Report was filed in 2007 with a reconciliation to U.S. GAAP.

LABSRET is the natural log of the absolute value of the average of firm i's daily returns cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

LAVGMKTVOL is the natural log of the average percentage of shares traded on the New York Stock Exchange and the American Stock Exchange cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier.

LPRIORVOL is the natural log of the median percentage of firm i's shares traded cumulated over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

LVOLATILITY is the natural log of firm i's standard deviation of daily returns over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

LMKTVALUE is the natural log of firm i's market value of equity two days (t = -2) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier.

LINST is the natural log of firm i's institutional holdings as a percentage of shares outstanding.

Table 7
Regression Analysis - Changes Model - 2 Day Window
All Foreign Private Issuers

$$\%\Delta LVOL_i = \beta_0 + \beta_1 ELIMINATION_i + \beta_2 \%\Delta LABSRET_i + \beta_3 \%\Delta LAVGMKTVOL_i + \%\Delta\beta_4 LPRIORVOL_i + \beta_5 \%\Delta LVOLATILITY_i + \beta_6 \%\Delta LMKTVALUE_i + \beta_7 \%\Delta LINST_i + \omega_i$$

		Model Coefficient over [t-value]		
Variable	Predicted Sign	3	4	5
Intercept		0.06802 [1.46]	0.09481 [2.14]	0.10879 [2.74]
ELIMINATION	-	-0.05564 [-1.62]	-0.05536 [-1.70]	-0.05193 [-1.78]
%ΔLABSRET	+	0.1102 [2.44]	0.10633 [2.49]	0.1152 [2.81]
%ΔLAVGMKTVOL	+	0.36388 [0.82]	0.50073 [1.18]	0.71625 [1.87]
%ΔLPRIORVOL	+	0.76985 [7.46]	0.69046 [6.70]	0.66104 [6.99]
%ΔLVOLATILITY	+	-0.0711 [-0.36]	0.19719 [1.02]	0.14039 [0.77]
%ΔLMKTVALUE	-		-0.29657 [-1.81]	-0.00386 [-0.02]
%ΔLINST	+			0.09754 [1.33]
n		187	184	170
Adj R2		0.3074	0.3381	0.3273

This sample includes all foreign private issuers that filed their 20-F report before August 1, 2008 and also filed a 20-F report in 2007.
The dependent variable, %ΔLVOL, is the percentage change in LVOL from 2007 to 2008.
ELIMINATION is 1 if the foreign private issuer reconciled their financials to U.S. GAAP in 2007 and then eliminated the U.S. GAAP reconciliation in 2008; 0 if the foreign private issuer was unaffected by the SEC rule to eliminate the reconciliation.
%ΔLABSRET is the percentage change in LABSRET from 2007 to 2008.
%ΔLPRIORVOL is the percentage change in LPRIORVOL from 2007 to 2008.
%ΔLAVGMKTVOL is the percentage change in LAVGMKTVOL from 2007 to 2008.
%ΔLVOLATILITY is the percentage change in LVOLATILITY form 2007 to 2008.
%ΔLMKTVALUE is the percentage change in LMKTVALUE from 2007 to 2008.
%ΔLINST is the percentage change in LINST from 2007 to 2008.
Where: LVOL is the natural log of the average percentage of firm i's shares traded cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier. LABSRET is the natural log of the absolute value of the average of firm i's daily returns cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier. LAVGMKTVOL is the natural log of the average percentage of shares traded on the New York Stock Exchange and the American Stock Exchange cumulated over a two (t = -1 to 0) day window around the announcement (at t = 0) of the firm's 20-F report or annual report, whichever is released earlier. LPRIORVOL is the natural log of the median percentage of firm i's shares traded cumulated over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier. LVOLATILITY is the natural log of firm i's standard deviation of daily returns over the 50 days (t = -54 to -5) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier. LMKTVALUE is the natural log of firm i's market value of equity two days (t = -2) prior to the announcement of the firm's 20-F report or annual report, whichever is released earlier. LINST is the natural log of firm i's institutional holdings as a percentage of shares outstanding.

5. CONCLUSION

This dissertation includes three manuscripts each of which provides an important contribution to the accounting literature. The first two studies deal with a change in the analyst forecasting environment. In 1993 analysts began forecasting alternate financial statement items beyond EPS with a significant shift in new items occurring in 2001-2002. The first two studies investigate the impact and importance of these new analysts' forecasts. The first study investigates how the new forecasts affected the EPS market premium. The second study investigates the impact of meeting/beating a specific new forecast, operating cash flow, on a firm's cost of debt. The third study documents the impact of eliminating an important accounting disclosure. All three manuscripts expand our current knowledge of the importance of public disclosures to capital market participants.

This dissertation contributes to the accounting literature related to analysts' forecasts and mandatory public disclosures. The first manuscript provides an alternate explanation for the decline in the EPS market premium. Results indicate that the decline in the EPS premium was temporary and the premium returned in 2005. This finding is important because many accounting scholars have argued that the premium is a primary motivator of earnings management. This study also provides evidence that the disappearance of the premium was not solely due to investor skepticism. Changes in the analyst forecasting environment also contributed to the decline. This finding is important because it indicates that the scandals did not have as strong of an effect on investors' confidence in earnings as previously believed. The second manuscript provides evidence that bondholders reward firms for meeting/beating analysts' operating cash flow forecasts. The findings should be of interest to those studying the meet/beat phenomenon and investors relying on analysts' forecasts, as well as to managers interested in how investors

evaluate performance. Finally, the third manuscript provides evidence that value relevant information was lost when the IFRS – U.S.GAAP reconciliation was eliminated. This finding is of interest to policymakers who are considering requiring US issuers to file in IFRS. All of these manuscripts contribute to the accounting literature related to the importance of public disclosures to capital market participants.