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CROSS-SECTIONAL DETERMINANTS OF THE IMPACT OF

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CROSS-SECTIONAL DETERMINANTS OF THE IMPACT OF
MANAGEMENT CASH FLOW FORECASTS

A DISSERTATION APPROVED FOR THE
MICHAEL F. PRICE COLLEGE OF BUSINESS

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DEDICATION

I dedicate this dissertation to my parents, Xiangyu Liu and Baoguang Fan, who have given me so much more than life. It is also dedicated to my grandmother, Hanzhang Shi, who had been encouraging and supporting me since I was born, but regrettably passed away during the development of my dissertation.

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ABSTRACT

I examine the impact of management *cash flow* forecasts on market participants, including investors and analysts. I posit and find that the news in management cash flow forecasts is priced beyond the news in total earnings. Furthermore, analyst earnings forecast revisions relate positively to the news in management cash flow forecasts. I also find that the impact of management cash flow forecasts varies predictably across firms based on certain characteristics. The market's positive pricing of cash flow forecast news is greater for firms with bad earnings news, for financially distressed firms, for growth firms, and for firms with relatively higher value relevance of reported cash flows than that of reported accruals. The positive relation between analyst earnings forecast revision and the news in management cash flow forecast is also greater for firms with bad earnings news, and for firms with relatively higher value relevance of reported cash flows. Additional tests document that management cash flow forecasts are associated with lower analyst forecast error and lower forecast dispersion in general and especially for firms with relatively more value-relevant reported cash flows. My study provides information to market participants, managers, auditors, and researchers by documenting the consequences of voluntary disclosure in the area of management cash flow forecasts.

CHAPTER I. INTRODUCTION

The incentives, the determinants, the consequences, and the properties of management voluntary disclosure have been examined empirically in many different contexts. With respect to managers' voluntary forecasts, the existing literature focuses nearly exclusively on *earnings* forecasts. In this study, I examine voluntary disclosure under the context of management *cash flow* forecasts. Specifically, I investigate the impact that management cash flow forecasts have on market participants by examining whether the market prices the news in management cash flow forecasts in the presence of total earnings news and whether analysts respond to such forecasts by revising their earnings forecasts. More importantly, I investigate whether firm characteristics determine the degree to which the market prices and analysts respond to cash flow news differently from the accrual information embedded in management forecasts. To the extent that the cash flow component of earnings is more/less value-relevant than is the accrual component for certain firms, the impact that managers' cash flow forecasts have on market participants is expected to vary predictably across firms. The firm characteristics that I examine include contemporaneous bad news in earnings, financial distress, firm growth, and value relevance of reported cash flows relative to that of reported accruals.

The overall expectation that management cash flow forecasts will affect market participants is not clear. To the extent that cash flows are one component of earnings and management cash flow forecasts are often issued in conjunction with earnings forecasts, the information in cash flows may be embedded in earnings news. Thus, I consider that my tests are tests of the effect of management cash flow forecasts on (1)

the market's differential pricings of earnings components in the presence of contemporaneous earnings news and (2) on analyst earnings forecasts.

Several previous studies document that the value relevance of cash flows is incremental to that of accruals (i.e., accrual-based earnings). However, no study tests this in the context of management forecasts. Management cash flow forecasts may not be perceived as credible by market participants if they believe such forecasts reflect managers' opportunistic behavior, as opposed to managers' commitment to reliably communicate relevant information. At the same time, management cash flow forecasts could provide additional credibility to forecasted earnings by disciplining managers' accrual manipulation behavior. This could be the case because providing forecasts of both cash flows and earnings is equivalent to also providing a forecast of accruals. Furthermore, the ability of a forecast to signal credible, relevant information is expected to vary across firm characteristics. Prior research provides relatively less evidence on the cross-sectional incremental value relevance of cash flows, especially from a management forecast perspective.

I find that, controlling for the news in total earnings, the market prices the news in management cash flow forecasts positively and that analysts revise their earnings forecasts upward (downward) following good (bad) news management cash flow forecasts. Distinguishing firms by their unique characteristics, I find that the market's positive pricing of the news in management cash flow forecasts is greater for firms with bad news in earnings, for firms in financial distress, for growth firms, and for firms with relatively higher value relevance of reported cash flows than that of reported accruals. Furthermore, the positive association between the news in management cash flow

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forecasts and analyst earnings forecast revisions is greater for firms with bad earnings news and for firms that the cash flow component is more value-relevant than is the accrual component of earnings. In additional tests, I document that analyst earnings forecast error and forecast dispersion are smaller for firms that provide management cash flow forecasts. My results identify the circumstances under which management cash flow forecasts are more useful for decision making and have a greater impact on market participants.

While several studies investigate cash flow forecasts of *analysts*, only two recent studies examine *management* cash flow forecasts. Wasley and Wu (2006) study the determinants of management cash flow forecasts. Their primary conclusion is that managers are more likely to issue cash flow forecasts when investors demand such information and when managers perceive benefits from providing such forecasts. Cao et al. (2009) take a further step by examining the incentives of "soft-talk" management cash flow forecasts. They document the association between "soft-talk" cash flow forecasts and litigation risk, financial distress, actual cash flow performance, analyst following, and the issuance of prior cash flow forecasts.

These two studies together provide rationales for why managers voluntarily issue cash flow forecasts and why they exert discretion over how informative and credible such forecasts could be. The reasons behind the disclosure and the discretion allude to managerial incentives, the perceived economic benefits to the firm, litigation risk, and signaling. However, these studies focus on the *a priori* determinants of management cash flow forecasts but do not specifically examine the *ex post* impact of management cash flow forecasts. Leuz and Wysocki (2010) call for more empirical

research on the economic consequences of voluntary disclosure and disclosure regulation. My study answers their call and investigates various aspects of the impact of voluntary disclosure in the context of management cash flow forecasts. I address the questions of whether management cash flow forecasts affect market participants (i.e., provide information to investors and financial analysts) and how this impact varies cross-sectionally. Empirical results support the argument that management cash flow forecasts affect the market's pricing and the analyst's expectation of earnings components in the presence of total earnings information.

My findings should be of interest to managers, financial analysts, investors, auditors, and researchers. For managers, understanding the impact of management cash flow forecasts is important because it informs whether their information dissemination is successful and has the intended effect. Management forecasts are also important for financial analysts in helping them to formulate better expectations about the future earnings potential of the firm. Market participants may benefit from management cash flow forecasts by helping them to value the company and better understand the cash flow versus accrual components of earnings.

In addition, auditors may be interested in the impact of management cash flow forecasts. Many of these forecasts are made with the release of audited financial statements. This increases audit effort and risk. Auditors are required to review any information voluntarily disclosed by the managers in the documents that accompany audited financial statements, even though they are not required to audit such disclosures made voluntarily by the managers. This requirement is stated in *Statement of Auditing Standards Nos. 8, Other Information in Documents Containing Audited Financial*

Statements (AICPA 1985). Recent research (Krishnan et al. 2009) documents increased

audit fees associated with firms issuing management earnings guidance due to the

perceived higher litigation risk by the auditors.

Finally, my study also informs researchers by extending the literature on

voluntary disclosure in the area of management cash flow forecasts, which has been

scarce. The sample period I adopt is 2004–2008, which extends Wasley and Wu's

(2006) and Cao et al.'s (2010) sample period of 1993–2003. I provide detailed

examination of the ex post impact of management cash flow forecasts, with the focus on

capital market (investors and analysts). In addition, I investigate the specific contexts

under which the impact of such forecasts on capital market is greater, i.e., management

cash flow forecasts provide more information to investors and analysts in terms of the

differential pricings of earnings components and of analyst earnings forecast revisions.

In the next chapter, I discuss the background, related literature, and hypotheses

development. Chapter III provides research designs for empirical tests. In Chapter IV, I

describe data collection and sample selection process, along with descriptive statistics. I

provide test results and analyses in Chapter V. Chapter VI concludes the study.

CHAPTER II. BACKGROUND AND HYPOTHESES

Theories of Voluntary Disclosure

Corporate disclosure is an important means for management to communicate

firm performance and future prospects to market participants. Managers can provide

private information through financial reporting and voluntary disclosure to external

capital providers to alleviate agency conflicts, modeled by Jensen and Meckling (1976),

and to signal the type of their firms to reduce information asymmetry problems (Akerlof 1979). Early studies (Grossman and Hart 1980; Grossman 1981; Milgrom 1981), based on adverse selection, predict that managers disclose all value-relevant information (full disclosure). However, later analytical work points out that there are constraints associated with disclosure. Proprietary costs limit manager's willingness to disclose (Verrecchia 1983). Disclosing too much firm-specific information may cause the firms to lose their competitive advantage. Dye (1985), and Jung and Kwon (1988) assume uncertainty about whether managers have private information to disclose. They derive a separating equilibrium and demonstrate that firms with good news disclose and firms with bad news withhold information.

Motivation for voluntarily disclosure can be twofold. First, managers' voluntarily disclose information to reduce information asymmetry between themselves and investors. Voluntary disclosure allows managers to convey private information and signal future prospects to the market. This is particularly true for firms with more severe information asymmetry problems, such as small and growth firms. The informational need indicates that managers believe that their firms are misvalued and intend to use voluntary disclosure to correct the market's perceptions of the firms. Second, voluntary disclosure may also arise from managers' self-interested motives. Managers can exert the discretion over the timing, the quality, and the quantity of the disclosure to hype stock prices for personal benefits or to guide down market expectations to avoid negative surprises and the subsequent negative equity valuation.

Myers and Majluf (1984) show that because of the information asymmetry problem, managers are willing to forego profitable investment projects and avoid

raising external capital. Disclosure policy has been shown in the literature as a mechanism to mitigate such problems (Bushman and Smith 2001; Verrecchia 2001; Stein 2003). Managers can voluntarily disclose financial information to signal the type of their firms and obtain external financing at lower costs to fund their growth opportunities. Managers will do so if they deem the benefits of disclosing outweigh the costs. With more public information, the liquidity of the firm's stock increases (Diamond and Verrecchia 1991) and the cost of capital decreases (Lambert at el. 2007).

Empirical Evidence Related to Voluntary Disclosure in General

The incentives, the determinants, the consequences, and the properties of voluntary disclosure have been examined empirically under many different contexts. Prior research provides abundant evidence supporting the benefits of voluntary disclosure. For example, voluntary disclosure is demonstrated to be associated with reduced cost of equity capital for firms with lower analyst following (Botosan 1997), lower cost of debt (Sengupta 1998), enhanced liquidity of the stock market (Healy et al. 1999; Leuz and Verrecchia 2000), and higher valuation of the firm (Barton and Waymire 2004). The costs of voluntary disclosure are shown in various studies, including the direct preparation and dissemination costs (Ribstein 2005) and indirect proprietary cost (Harris 1998; Leuz 2004), which can be substantial. Litigation risk associated with voluntary disclosure may be another concern of managers and discourage them from disclosing voluntarily (Kasznik and Lev 1995; Skinner 1997; Johnson et al. 2001).

Prior literature focuses primarily on management *earnings* forecasts made in conference calls, earnings announcements, and press releases. Only two recent studies in the literature investigate management *cash flow* forecasts. Wasley and Wu (2006) examine the determinants of management cash flow forecasts. They document that managers issue cash flow forecasts in the period when there is a large increase in operating cash flows, to meet investor demand for cash flow information, and to precommit to a certain composition of earnings in terms of cash flows versus accruals. Additionally, they find managers disclose good news in cash flows in an attempt to reduce the negative effect of bad news in earnings, to lend credibility to good news in earnings, and to signal economic viability of young firms. They also find that management cash flow forecasts mostly convey good news information, as opposed to bad news information in management *earnings* forecasts. While their study offers a list of motives behind management cash flow forecasts, they do not examine the impact of such forecasts on capital market participants or how that impact varies across firms.

Cao et al. (2009) use a subsample of firms in Wasley and Wu (2006) to distinguish management's faithful and "soft-talk" cash flow forecasts. They find that many management cash flow forecasts are issued with an unclear definition of cash flows that has low *ex post* verifiability. These forecasts are associated with an optimistic bias and investors do not find these "soft-talk" cash flow forecasts credible. Cao et al. (2009) reason that management's decision to issue "soft-talk" cash flow forecasts is related to litigation risk, financial distress, actual cash flows performance, analyst following, and the issuance of prior cash flow forecasts. Their study examines the stock price reaction to management cash flow forecasts distinguishing the forecasts with

GAAP-based and discretionary definition of cash flows. My study complements theirs in that I test for the cross-sectional differences in the impact of management cash flow forecasts on the market's differential pricings of earnings components and that on analyst earnings forecasts in different contexts based upon distinct firm characteristics.

In sum, the recent trend in the increasing amounts of analyst and management cash flow forecasts provides ample opportunity for research.[1] However, most studies focus on *analyst* cash flow forecasts and rely on readily available data from *I/B/E/S*. Wasley and Wu (2006) and Cao et al. (2009) are the only studies that examine cash flow forecasts by *management*. To the extent that managers are the primary information providers and may have incentives to behave opportunistically while analysts are a sophisticated group of market participants who respond to and help disseminate the information provided by managers, management and analyst cash flow forecasts potentially have different implications to market participants.

Hypotheses Development

Market Pricing of the News in Management Cash Flow Forecasts

In this section, I discuss the market's pricing of the news in management cash flow forecasts in the presence of total earnings news. Such an investigation essentially becomes one that tests for the differential pricing of the news in management cash flow forecasts than that of the news related to accruals.

Because management cash flow forecasts are a relatively new phenomenon, extant research has focused on the pricing of *reported* cash flows beyond *reported*

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[1] For evidence of the increasing trend in analyst cash flow forecasts, see, e.g., DeFond and Hung (2003), Brown and Pinello (2008), and Call (2008). Wasley and Wu (2006) demonstrate a similar increasing trend for management cash flow forecasts.

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accruals. Prior studies typically conclude that the pricing of the cash flow component of reported earnings is greater than that of reported accruals (Rayburn 1986; Bowen et al. 1987). The primary reason attributed to the greater pricing of cash flows is their greater persistence for future earnings (Barth et al. 1999). As discussed previously, it is not necessarily the case that the news in management cash flow forecasts will have the same impact on market participants as do reported amounts, and prior research has yet to examine the cross-sectional determinants of the impact of management cash flow forecasts. Cash flows are one component of earnings, and cash flow forecasts may be partially embedded in earnings forecasts. As a result, the market may not price cash flow information contained in management cash flow forecasts beyond the existing earnings information. This is especially the case when market participants perceive that such forecasts reflect managers' opportunistic behavior, as opposed to their commitment to reliably communicate relevant information. Cao et al. (2009) document that managers may issue cash flow forecasts with unclear definition that are perceived to be less credible by the market. Hugon and Lin (2010) also find that one-third of management earnings forecasts are misleading (i.e., less accurate than the existing consensus analyst forecasts) and that investors and analysts discount such misleading forecasts.

Regarding the impact of the news in management *earnings* forecasts, Penman (1980) examines whether such forecasts convey information to the market. He finds evidence that firms earn excess stock returns around the forecast announcement. Waymire (1984) documents that good news (bad news) management forecasts are associated with significant positive (negative) abnormal returns in the days surrounding

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the forecast publication. His study adds more evidence that management earnings forecasts provide credible and value-relevant information.

Combining the results from the management earnings forecast literature with studies that show the greater pricing of reported cash flows, I expect that management cash flow forecasts are priced beyond total news in earnings, all else equal. My first hypothesis is:

H1: The market pricing of the news in management cash flow forecasts is positive, controlling for total earnings news.

This hypothesis implies that the market prices the news in management cash flow forecasts higher than it prices the news in accrual information. The higher pricing of the news in management cash flow forecasts may be greater for firms with specific characteristics. The value relevance of cash flows relative to accruals is expected to be increasing in certain firm characteristics. Specifically, I conjecture that in each of the four contexts discussed below, the market's higher pricing of the news in management cash flow forecasts than that in accrual information is greater.

The first attribute of the firms I examine is contemporaneous *earnings* news. Findings in prior research show that bad earnings news (e.g., losses) has a smaller pricing impact because the news is more transitory and firms may opt for the abandonment option (Basu 1997; Hayn 1995; Burgstahler and Dichev 1997). Under this context, the market may be less concerned with accrual-based earnings and more interested in underlying cash flows, because cash flows is more persistent. Cash flow

forecasts provided by managers facilitate market participants' assessments of firms' future performance, and managers are more likely to offer guidance to signal their firm type.

Consistent with the argument above, Wasley and Wu (2006) find that when firms have bad news in earnings, management is more likely to disclose good news in cash flows to mitigate bad news in earnings. DeFond and Hung (2003) also conclude that cash flow forecasts facilitate market participants' assessment of firm solvency. Hence, I expect that the market's positive pricing of the news in management cash flow forecasts to be greater for firms with contemporaneous bad news in earnings. This leads to the following hypothesis:

> H1a. The market's positive pricing of the news in management cash flow forecasts is greater for firms with bad earnings news, controlling for total earnings news.

This hypothesis suggests that the greater pricing of the news in management cash flow forecasts (relative to that in accrual information) increases when firms have contemporaneous bad news in earnings.

Signaling future prospects or lack thereof through cash flow forecasts could also be employed by managers of firms in poor financial health. When firms are in poor financial health, investors may be more concerned with firms' underlying cash flows, because the cash flow component is more persistent than is the accrual component of earnings (Rayburn 1986; Bowen et al. 1987). In addition, the information asymmetry

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and the agency conflicts may be more severe for firms in poor financial health. Because

these problems prevent investors from correctly understanding whether firms are able to

survive financial distress, they are more likely to demand cash flow information. The

findings in DeFond and Hung (2003) that analysts tend to forecast cash flows for firms

with poor financial health can be viewed as a response to a higher informational

demand of investors. Hence, financial distress presents another condition in which the

market's positive pricing of cash flows information will be greater than the pricing of

accrual information. My hypothesis is stated as follows:

> H1b. The market's positive pricing of the news in management cash flow
>
> forecasts is greater for firms in financial distress, controlling for total
>
> earnings news.

For growth firms, information asymmetry problems are also more severe.

Wasley and Wu (2006) find that growth firms are more likely to issue cash flow

forecasts in response to the greater market demand for such information. This is because

cash flow information is relatively more value-relevant for growth firms. Kumar and

Krishnan (2008) examine the role of growth opportunities as a determinant of the

relative importance of operating cash flows versus accruals in firm valuation. Their

results suggest that the value relevance of operating cash flows increases in growth

opportunities. Furthermore, Black (1998) studies the relative value relevance of

earnings versus cash flows of firms in different life-cycle stages. He finds that operating

cash flows are more value-relevant than are the accruals for growth firms but not for

those in mature stages. In addition, growth firms are relatively small and have been in the capital market for a shorter period of time. They are less likely to have accumulated significant amount of cash. In this case, cash flow forecasts can be used by managers to signal the availability of their firms' internal resources and the ability to fund profitable investment opportunities.

Thus, I expect that the market's higher pricing of the news in management cash flow forecasts than that of the news in accrual information to be greater for growth firms. This is stated in the following hypothesis:

H1c. The market's positive pricing of the news in management cash flow

forecasts is greater for growth firms, controlling for total earnings news.

The market's pricing of the news in management cash flow forecasts is also likely to differ across firms with different levels of value relevance of reported cash flows relative to that of reported accruals. This is because cash flow information may be intrinsically more value-relevant for certain firms and may have higher predictive ability for firms' future prospects. Barth et al. (1999) demonstrate that the differential pricing of cash flows and accruals varies considerably across industries. Although reported and forecasted cash flows are likely to be correlated, it could be the case that management's forecasted information is too noisy or unreliable, and investors rely primarily on reported amounts to value the firm. In addition, investors may perceive certain signals from the manager's discretion in forecasting future amounts compared to reported amounts.

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I expect the market's positive pricing of the news in management cash flow forecasts to be greater for firms in industries with relatively higher value relevance of reported cash flows than that of reported accruals. My hypothesis is the following:

H1d. The market's positive pricing of the news in management cash flow forecasts is greater as the value relevance of reported cash flows relative to that of reported accruals increases, controlling for total earnings news.

Analyst Incorporation of the News in Management Cash Flow Forecasts

Next, I examine the impact of management cash flow forecasts on financial analysts. These tests offer certain advantages and disadvantages compared to investor-based tests (i.e., price reaction to cash flow news) and therefore may not necessarily result in the same conclusions. First, financial analysts represent a more sophisticated group of market participants. They have, on average, superior knowledge and more expertise in interpreting information contained in firms' financial reports. Their forecasts of firms' future prospects are expected to reflect more closely the information contained in financial information released by managers such as earnings and cash flow forecasts. Second, analysts' expectations (forecast magnitude) and their differences in interpretations (forecast dispersion) of firms' future prospects offer the advantages of being directly observable, while investors' expectations and differences in beliefs are not directly observable from stock prices. Third, most would consider stock prices to be a noisy (although unbiased) measure of expectations. Prices are affected by a multitude of factors and therefore are likely much nosier than are analysts' forecasts, which could

affect statistical power in small-sample studies such as mine. However, it is also the case that prior research provides ample evidence that analysts' forecasts contain many predictable biases and exhibit herding behavior. In summary, market-based tests versus analyst-based tests provide trade-offs and it is unclear which provides the "better" test of the impact of information on market participants. Therefore, I supplement market reaction tests described in Hypothesis 1 with tests using analyst earnings forecasts.

Prior research examines how corporate disclosure policy affects financial analysts, who are either representing or influencing the market's expectations (Nichols 1989; Schipper 1991). Analysts play an important role as information intermediary in capital markets. They help disseminate information provided by managers to the public, whether the information is released privately to them prior to Regulation Fair Disclosure or is disclosed to the public. Thus, analysts' ability to incorporate management voluntary disclosure into their forecasts would have implications on the information environment subsequent to the disclosure. I examine whether analysts respond to cash flow news in the presence of earnings news by revising their earnings forecasts following management cash flow forecasts. If managers issue cash flow forecasts to move existing market expectations, analysts should incorporate new information and revise their expectations of firms' future earnings accordingly. In this case, information asymmetry is reduced and analysts' expectations about firms' future performance are moved toward those of the managers.

Empirically, studies investigating analyst response to management voluntary disclosure of earnings information date back to the 1980s. Ajinkya and Gift (1984) provide evidence that analysts revise their earnings forecasts in an unbiased fashion, i.e.

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"good news" forecasts are associated with upward price revisions and "bad news" forecasts result in downward price revisions. Baginski and Hassell (1990) and Jennings (1984, 1987) provide evidence that analysts revise their forecasts in response to management earnings forecasts. Waymire (1986) finds that the accuracy of analyst earnings forecasts increases after management earnings forecasts. Lang and Lundholm (1996) document that firms with more informative disclosure are associated with larger analyst following. More importantly, the disclosure allows analysts to reduce forecast error, forecast dispersion among individual analysts, and the volatility in forecast revisions.[2] In addition, Call et al. (2009) conclude that analyst earnings forecasts are more accurate when accompanied by cash flow forecasts. When analysts attend to firms' cash flow information and explicitly forecast future cash flows, they understand better the firms' future earnings.

I expect that management cash flow forecasts, as part of the firm's overall corporate disclosure policy, also affect analyst earnings forecasts. This is because when management issues cash flow forecasts, information asymmetry problems are mitigated and the uncertainty of firms' future earnings declines. I predict that analysts revise their earnings forecasts following management cash flow forecasts. Specifically, I hypothesize that:

> H2: Analyst earnings forecast revisions relate positively to the news in management cash flow forecasts, controlling for total earnings news.

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[2] Lang and Lundolm (1996) use AIMR analysts' ratings of the overall disclosure including quarterly filings, press releases, and proxy statements to proxy for corporate disclosure policy.

Similar to the discussions of the hypotheses regarding the market's pricing of the news in management cash flow forecasts, I argue that under different contexts, the impact of management cash flow forecasts on analyst earnings forecasts differs cross-sectionally as well. This is because cash flow information may be more value-relevant and more useful to analysts for certain firms. Ahmed et al. (2009) document that analysts' interpretation of earnings news in earnings announcement varies with firm characteristics.

I first distinguish good news earnings firms from bad news earnings firms. The argument follows that when earnings fall short of the expectations, it is more difficult for analysts to form subsequent expectations of firms' future earnings. When management discloses cash flow information, it provides some indication of future earnings composition when earnings news is bad. This aids analysts in gaining a better understanding of the components of firms' earnings and gives them a more complete picture of where firms' earnings fall short of expectations (accruals versus cash flows). Analysts can then revise their forecasts in a more systematic manner, incorporating cash flow information. This is consistent with Call et al.'s (2009) findings that when analysts forecast cash flows, they adopt a more structured approach in evaluating firms' overall financial position and forecast a full set of financial statements. This leads to the following hypothesis:

H2a: The positive relation between analyst earnings forecast revisions and the news in management cash flow forecasts is greater for firms with bad earnings news, controlling for total earnings news.

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Analysts also may have greater difficulty in assessing future prospects for financially distressed firms. Similar to the argument supporting H1b, information asymmetry problems and agency conflicts between shareholders and creditors are more severe when the firm experiences financial distress. Shareholders are more concerned with firms' cash flows when the firm experiences financial difficulties. Managers may issue cash flow forecasts to signal whether their firms have the opportunity and the potential to survive financial distress and to improve financial health. Management cash flow forecasts under this context may thus have higher perceived benefits in improving firms' information environment. I contend that management cash flow forecasts affect analyst earnings forecasts more strongly for firms in financial distress. My hypothesis related to this is:

>
> H2b: The positive relation between analyst earnings forecast revisions and the news in management cash flow forecasts is greater for firms in financial distress, controlling for total earnings news.

For growth firms, information asymmetry problems may be more severe. Similar to the discussion supporting H1c, growth firms have significant amount of accruals and less accumulation of cash. As argued in Kumar and Krishnan (2008) and Black (1998), growth firms' cash flows are more relevant in firm valuations because these firms need cash to exploit investment opportunities. Therefore, cash flow forecasts can be used by managers to signal the availability of their firms' internal resources and the ability to fund profitable investment opportunities. I expect that

growth firms' management cash flow forecasts help analysts to a larger extent in formulating their expectations of future earnings. Specifically, my hypothesis is the following:

> H2c: The positive relation between analyst earnings forecast revisions and the news in management cash flow forecasts is greater for growth firms, controlling for total earnings news.

Similar to the discussion in H1d, analysts' use of management cash flow forecasts is also likely to differ across firms with different levels of value relevance of reported cash flows relative to that of reported accruals. Prior studies have shown that the value relevance of earnings (or its components) is linked directly to the ability of earning (or its components) to persist into next period's earnings (Lipe 1986). I expect that, as value relevance of reported cash flows relative to that of reported accruals increases, management cash flow forecasts aid analysts more in forecasting earnings. My hypothesis is as follows:

> H2d. The positive relation between analyst earnings forecast revisions and the news in management cash flow forecasts is greater as the value relevance of reported cash flows relative to that of reported accruals increases, controlling for total earnings news.

CHAPTER III. RESEARCH DESIGN

Testing H1

H1 predicts that the market pricing of the news in management cash flow forecasts is positive, controlling for total earnings news. In other words, the market prices the news in management cash flow forecasts higher than it prices that in accrual information. To test this hypothesis, I examine the three-day cumulated abnormal stock returns surrounding the release of the management cash flow forecast, controlling for contemporaneous earnings news. I use the following model:

$$CAR_{(d-1,\ d+1)} = \alpha_0 + \beta_1 * CF\_News_d + \alpha_1 * E\_News_d + \varepsilon_{(d-1,\ d+1)} \tag{1}$$

where $CAR_{(d-1,\ d+1)}$ represents three-day cumulated abnormal returns surrounding management cash flow forecasts. Subscript d refers to the day on which management cash flow forecast is released. CF_News_d represents the news in management cash flow forecasts. It is the difference between management forecasted cash flows and the expected cash flows prior to the forecast. Expected cash flows are measured in two ways. First, I use the previous management cash flow forecast for year t before day d, if available. Second, when a previous management cash flow forecast of year t is not available, I set expected cash flows equal to reported cash flows in year t–1. I control for contemporaneous earnings news (E_News_d), proxied by the difference between the contemporaneous management earnings forecast and expected earnings prior to day d. Expected earnings equal managers' previous earnings forecast. When managers'

previous forecasts are unavailable, analysts' forecasts in the month prior to day d are used.

A sample of firms with management cash flow forecasts is collected for testing H1. I predict a positive relation between the three-day cumulated abnormal returns and the news in management cash flow forecasts ($\beta_1 > 0$), controlling for earnings news.

Testing H1a–H1d

H1a–H1d contend that the market's positive pricing of the news in management cash flow forecasts is greater for firms with bad news in earnings, for firms in financial distress, for firms with greater growth opportunities, and for firms with higher value relevance of reported cash flows relative to that of reported accruals. In other words, the market's higher pricing of the news in management cash flow forecasts than that of the news in accrual information is greater for firms with these characteristics. To test these conjectures, I modify Model (1) by adding interaction variables for these firm characteristics (FC). Model (1′) below shows the empirical specification:

$$CAR_{(d-1, d+1)} = \alpha_0 + \beta_1*CF\_News_d + \alpha_1*E\_News_d + \gamma_1*FC_d \qquad (1')$$
$$+ \beta_{1a-1d}*CF\_News_d*FC_d + \alpha_{1a-1d}*E\_News_d*FC_d + \varepsilon_{(d-1, d+1)}$$

I substitute FC_d with alternative firm characteristics discussed in H1a–H1d. They are Bad_Earn_d, $Distress_{t-1}$, $Growth_{t-1}$, and Ind_CF_{t-1} (defined below). The estimated β_{1a-1d} is the key coefficient of interest in testing H1a–H1d. I expect a positive

relation between the three-day abnormal stock returns and the pricing of cash flow news for each of the FC variables ($\beta_{1a\text{-}1d} > 0$).

For H1a, Bad_Earn_d is an indicator variable that equals 1 if the contemporaneous earnings news is negative, and equals 0 otherwise. For H1b, $Distress_{t-1}$ is financial distress, measured as Altman's (1968) Z-score multiplied by -1 at the end of year $t-1$. A lower Z-score indicates poorer financial health. Thus, the higher the value of $Distress_{t-1}$, the more financially distressed the firm is. For H1c, $Growth_{t-1}$ is measured as the market-to-book ratio at the end of year $t-1$. Higher values of the market-to-book ratio represent higher firm growth. Finally, for H1d, Ind_CF_{t-1} measures the value relevance of reported cash flows relative to that of reported accruals in year $t-1$. I use the following specification to estimate Ind_CF_{t-1}:

$$Ret_{t-1} = \rho_0 + \rho_1 {}^*CF_{t-1} + \rho_2 {}^*Accr_{t-1} + \rho_3 {}^*CF_{t-2} + \rho_4 {}^*Accr_{t-2} + \varphi_{t-1} \qquad \text{(1d)}$$

Model (1d) provides a regression of one-year buy-and-hold stock returns for year $t-1$ (Ret) on operating cash flows (CF) and accruals ($Accr$) in year $t-1$ by two-digit SIC code. $Accr$ equals reported earnings minus reported operating cash flows. Following Ali and Zarowin (1992), I use both the level and the change to capture the value relevance of both transitory and permanent components of earnings. The coefficient on CF_{t-1} (ρ_1) represents the summation of the valuation coefficients on the level and the change in cash flows in the returns-earnings framework. Similarly, the coefficient on $Accr_{t-1}$ (ρ_2) represents the summation of the valuation coefficients on the level and the change in accruals. The value relevance of reported cash flows relative to

reported accruals is defined as the difference between the estimated ρ_1 and ρ_2 (Ind_CF_{t-1} $= \rho_1 - \rho_2$). Higher values of Ind_CF_{t-1} represent the relatively higher value relevance of reported cash flows than that of reported accruals.

Testing H2

     H2 predicts that management cash flow forecasts impact analyst earnings forecasts. Because of reduced information asymmetry afforded by additional voluntary disclosures, analysts are able to formulate better expectations about the firms they follow. I posit that analysts revise their earnings forecast more for the news in management cash flow forecasts than they do for the news in accrual information. To test this conjecture, I adopt the following model:

$$REV_{(m\text{-}1, m+1)} = \alpha_0 + \beta_2*CF\_News_d + \alpha_2*E\_News_d + \varepsilon_{(m\text{-}1, m+1)} \qquad (2)$$

where $REV_{(m\text{-}1, m+1)}$ is the revision of analyst earnings forecasts for year t, calculated as the mean of analyst earnings forecasts in the month after minus that in the month before the management cash flow forecast, scaled by closing stock price two days $(d-2)$ before the management cash flow forecast. Subscript m refers to the month in which management cash flow forecast is made. Other variables are as defined previously. According to the prediction in H2, I expect a positive relation between analyst earnings forecast revision and the news in management cash flow forecasts, indicating that the news in management cash flow forecasts provide information to analysts beyond the existing earnings news ($\beta_2 > 0$).

Testing H2a–H2d

H2a–H2d indicate that the positive relation between the news in management cash flow forecasts and analyst earnings forecast revision is greater for firms with contemporaneous bad news in earnings, for firms in financial distress, for growth firms, and for firms with relatively higher value relevance of reported cash flows than that of reported accruals. To test these conjectures, I augment Model (2) by adding interaction variables for firm characteristics (FC). Model (2′) below shows the empirical specification:

$$REV_{(m-1, m+1)} = \alpha_0 + \beta_2 {}^*CF\_News_d + \alpha_2 {}^*E\_News_d + \gamma_2 {}^*FC_d \qquad (2')$$
$$+ \beta_{2a-2d} {}^*CF\_News_d {}^*FC_d + \alpha_{2a-2d} {}^*E\_News_d {}^*FC_d + \varepsilon_{(m-1, m+1)}$$

All variables are as defined previously. Consistent with the arguments in H2a–H2d, I expect greater positive relations between the news in management cash flow forecasts and the interaction of analyst earnings forecast revisions and each of the FC variables ($\beta_{2a-2d} > 0$).

Additional Tests on Analyst Earnings Forecast Properties

H2 argues that management cash flow forecasts impact analyst earnings forecasts. With the improved information environment following management voluntary forecasts, analysts are equipped with a more complete set of information, which allows them to forecast firm earnings more accurately. Their differences in opinions about future prospects may also be smaller for firms that provide management

cash flow forecasts. I offer supplementary tests to examine the association between the issuance of management cash flow forecasts and analyst earnings forecast error and forecast dispersion. The following level and change models are specified for the empirical investigation of this relation:

$$|FE_t| = \alpha_0 + \beta_{2.1}{*}MCF_t + \omega_n{*}Numest_t + \mu_t \qquad\qquad (2.1)$$

$$Disp_t = \alpha_0 + \beta_{2.1}'{*}MCF_t + \omega_n{*}Numest_t + \mu_t \qquad\qquad (2.1')$$

$$\Delta|FE_t| = \alpha_0 + \beta_{2.2}{*}MCF_t + \omega_n{*}Numest_t + \mu_t \qquad\qquad (2.2)$$

$$\Delta Disp_t = \alpha_0 + \beta_{2.2}'{*}MCF_t + \omega_n{*}Numest_t + \mu_t \qquad\qquad (2.2')$$

$|FE_t|$ is the absolute value of analyst earnings forecast error, calculated as the absolute value of the difference between the consensus analyst earnings forecast in the month following the management cash flow forecast and the actual earnings per share reported on I/B/E/S at the end of year t. $Disp_t$ refers to the dispersion of the consensus analyst earnings forecasts in the month following the management cash flow forecast.

$\Delta|FE_t|$ proxies for the change in the absolute values of analyst earnings forecast errors from the month before to the month after the management cash forecast for year t. $\Delta Disp_t$ represents the change in analyst earnings forecast dispersions from the month before to the month after the management cash forecast for year t.

MCF_t is an indicator variable that equals 1 if management issues a cash flow forecast during year t and equals 0 otherwise. This specification requires a matched sample of firms without management cash flow forecasts. Matched sample firms are

selected based on industry, year, and size. *Numest$_t$* is the control variable indicating the number of analysts following the firm in year *t*.

I expect a negative relation between the issuance of management cash flow forecasts and the levels of and the changes in analyst earnings forecast error and forecast dispersion ($\beta_{2.1} < 0$, $\beta_{2.1}' < 0$, $\beta_{2.2} < 0$, and $\beta_{2.2}' < 0$).

Similar to the tests of H2a–H2d that examine the specific circumstances under which the analyst's response to the news in management cash flow forecasts is greater, additional tests are provided to examine whether the negative relation between the issuance of management cash flow forecasts and analyst earnings forecast error and forecast dispersion is greater (i.e., more negative) for firms with contemporaneous bad news in earnings, for firms in financial distress, for growth firms, and for firms with relatively higher value relevance of reported cash flows than that of reported accruals. To test these hypotheses, I augment Models (2.1), (2.1′), (2.2), and (2.2′) by adding interaction variables for these firm characteristics (FC). The models are as follows:

$$|FE_t| = \alpha_0 + \beta_{2.1}*MCF_t + \gamma_3*FC_{k,d} + \beta_{2.1k}*MCF_t*FC_{k,d} + \omega_n*Numest_t + \qquad (2.3)$$

$$\mu_t$$

$$Disp_t = \alpha_0 + \beta_{2.1}'*MCF_t + \gamma_3'*FC_{k,d} + \beta_{2.1k}'*MCF_t*FC_{k,d} + \omega_n*Numest_t \qquad (2.3')$$

$$+ \mu_t$$

$$\Delta|FE_t| = \alpha_0 + \beta_{2.2}*MCF_t + \gamma_3*FC_{k,d} + \beta_{2.2k}*MCF_t*FC_{k,d} + \omega_n*Numest_t \qquad (2.4)$$

$$+ \mu_t$$

$$\Delta Disp_t = \alpha_0 + \beta_{2.2}'{}^*MCF_t + \gamma_3'{}^*FC_{k,d} + \beta_{2.2k}'{}^*MCF_t{}^*FC_{k,d} + \omega_n{}^*Numest_t \qquad (2.4')$$

$$+ \mu_t$$

All variables are as defined previously. Models 2.3 and 2.3′ are potentially subject to an omitted correlated variable problem. The issuance of a management *earnings* forecast potentially reduces forecast error and dispersion (Waymire 1986). As shown previously, some firms concurrently issue management earnings forecasts at the time they issue cash flow forecasts. Therefore, it would be useful to include an indicator variable for whether a firm concurrently issued a management earnings forecast. While management earnings forecasts have been hand collected for my sample of firms, I do not have information on management earnings forecasts for the matched sample. Given that access to such information is prohibitively costly (purchased database or additional hand collection) and that these tests are supplementary, I do not include this variable in the models. I predict greater negative relations between the issuance of management cash flow forecasts and the interaction of analyst earnings forecast error and dispersion and each of the FC variables ($\beta_{2.3} < 0$, $\beta_{2.3}'$ < 0, $\beta_{2.4} < 0$, and $\beta_{2.4}' < 0$).

CHAPTER IV. DATA, SAMPLE, AND DESCRIPTIVE STATISTICS

Acquisition of management cash flow forecast data requires an extensive hand-collection exercise. I read press releases appearing on the *Dow Jones NewsWires* and in *The Wall Street Journal* gathered by *Factiva* using key word searches related to management cash flow forecasts. Financial data and stock returns are collected from

Compustat Fundamentals Annual and *CRSP*, respectively. Analyst earnings forecasts are obtained from *I/B/E/S Summary*. For supplementary tests for H2 and H2a–H2d, control firms with available data from *Compustat* and *I/B/E/S* are matched with sample firms based on industry, year, and size.

I search *Factiva* for management cash flow forecasts issued in North America for the period of 2004−2008. The sample selection process is detailed in Table 1. The initial sample of management cash flow forecasts of firms traded on U.S. stock exchanges consists of 1,550 firm-year observations, out of which 942 are point or range forecasts. The sample for testing H1 and H1a–H1d contains 775 management cash flow forecasts from 278 unique firms with all necessary data available from *Compustat* and *CRSP*. For testing H2 with analyst earnings forecast revision, the sample consists of 628 observations, with 224 unique firms. For additional tests complementing H2 using analyst forecast error and forecast dispersion, the sample contains 642 management cash flow forecasts from 227 unique firms. The matched control sample for this test also consists of 642 observations but without management cash flow forecasts. For tests of the changes in forecast error and forecast dispersion, the sample consists of 460 management cash flow forecasts from 185 unique firms, with a matched control sample of 460 observations without management cash flow forecasts. Tests of analyst forecast error and forecast dispersion require at least two analysts issuing forecasts for the firm.

Table 2 provides descriptive statistics for the variables, with definitions listed in the Appendix. Panel A of Table 2 shows the distributions of variables, while Panel B provides correlations. The mean (median) of the three-day abnormal stock returns surrounding the announcement of management cash flow forecasts is 0.0027 (0.0015).

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The mean (median) of the cash flow news in these forecasts is 0.0044 (0.0000). Contemporaneous earnings news has a mean (median) of 0.0033 (0.0000). For the sample with available analyst earnings forecast data, the mean (median) of analyst earnings forecast revision deflated by the stock price two days before the forecast announcement is 0.0000 (−0.0027). The mean (median) of the absolute value of analyst earnings forecast errors following management cash flow forecasts scaled by the absolute values of the mean consensus forecasts is 0.2679 (0.0733). The mean (median) of analyst earnings forecast dispersions following management cash flow forecasts scaled by the absolute value of the mean consensus forecasts is 0.0713 (0.0253). In addition, the mean (median) of the change in the absolute values of analyst earnings forecast errors following management cash flow forecasts scaled by the absolute values of the mean consensus forecasts is 0.0212 (0.0028). The mean (median) of the change in analyst earnings forecast dispersions following management cash flow forecasts scaled by the absolute value of the mean consensus forecasts is 0.0069 (0.0000).

Panel B of Table 2 shows that the Spearman (Pearson) correlation between the three-day abnormal stock returns and the news in management cash flow forecasts is 0.1315 (0.1442), significant at the 0.01 level, as expected. The Spearman (Pearson) correlation between the three-day abnormal stock returns and the contemporaneous earnings news is 0.2674 (0.1342), significant at the 0.01 level, also consistent with the expectation. The Spearman (Pearson) correlation between the news in management cash flow forecasts and contemporaneous earnings news is 0.0965 (0.1191). For the analyst earnings forecast revision sample, the Spearman (Pearson) correlation between analyst earnings forecast revision and the news in management cash flow forecasts is 0.1780

(0.1459), significant at the 0.01 level, as expected. The Spearman (Pearson) correlation between analyst earnings forecast revision and the contemporaneous earnings news is 0.3577 (0.1821), significant at the 0.01 level, also consistent with the expectation. The Spearman (Pearson) correlation between the three day abnormal stock returns and analyst earnings forecast revision is 0.4138 (0.1944), also significant at the 0.01 level. These correlations indicate that the news in management cash flow forecasts could convey information to analysts.

CHAPTER V. RESULTS

Tests of H1 and H1a–H1d

H1 and H1a–H1d examine the relation between the market pricing and the news in management cash flow forecasts, controlling for total earnings news. H1 indicates that the market prices the news in management cash flow forecasts higher than it prices the news in accrual information. H1a–H1d hypothesize the higher pricing of the news in management cash flow forecasts is greater for firms with bad news in earnings, for firms in financial distress, for growth firms, and for firms with relatively more value-relevant reported cash flows than that of reported accruals. I first provide individual tests (Table 3) and then provide a combined test (Table 5) of these firm characteristics.

Test of H1

The first columns of results in Table 3 Panels A and B show tests of H1. Panel A provides results for the full sample, while Panel B provides results for a reduced sample. The reduced sample includes only observations that also issue a concurrent

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management earnings forecast at the time of the management cash flow forecast. For these firms, tests of the differential pricing of the news in cash flow forecasts versus the news in accrual information are clearer. For the full sample, earnings forecast news is set to zero when no concurrent earnings forecast is issued, suggesting that the news in cash flow forecasts is accompanied by the opposite news in accrual forecasts (i.e., total earnings news is zero). This assumption may not hold in all settings, so I provide tests of both the full sample and a reduced sample to validate my conclusions.

In Panel A, contemporaneous earnings news and the three-day abnormal stock returns are positively related (0.3263; t = 3.32; p < 0.01), consistent with prior literature. The estimated coefficient on the news in management cash flow forecasts is 0.2895 (t = 3.83; p < 0.01), suggesting that the market prices $1.00 of cash flow news $0.29 higher than it prices $1.00 of accrual information. This finding provides strong support for H1.

In Panel B, I show stronger results with the reduced sample that includes only observations with both management cash flow and earnings forecasts available on the forecast announcement day. The estimated coefficient on the news in management cash flow forecasts is 0.4041 (t = 4.10; p < 0.01), indicating that for $1.00 of cash flow news, the market prices it $0.40 higher than it prices $1.00 of accrual information. The estimated coefficient on the earnings news is 0.2874 (t = 2.90; p < 0.01), consistent with prior studies. These results again support H1 that management cash flow forecasts provide information to investors and that the market's pricing of the cash flow news contained in management forecast is higher than that of accrual information.

Test of H1a

H1a argues that controlling for total earnings news, the market's positive pricing of the news in management cash flow forecasts is greater (i.e., more positive) for firms with bad news in earnings. The second columns in Table 3 Panels A and B show the results for testing H1a. Results in Panel A suggest that, consistent with the expectation, for firms with contemporaneous bad earnings news, the market's pricing of the news in management cash flow forecasts is significantly more positive (0.4775; t = 2.70; p < 0.01). Specifically, the market prices $0.48 higher (lower) for $1.00 good (bad) news in cash flows than it prices that in accrual information when firms have contemporaneous bad news in earnings.

Panel B shows similar results with the reduced sample. Consistent with H1a, the market's pricing of the news in management cash flow forecasts is significantly more positive (0.4315; t = 2.19; p = 0.03) for firms with bad earnings news. Combined with the results reported in Panel A, H1a is supported in that, for firms with contemporaneous bad news in earnings, good (bad) news in management cash flow forecasts is associated with more positive (negative) market pricing in the three days surrounding the forecast announcement. These findings imply that while management cash flow forecasts communicate information to the market beyond earnings information in general, the impact of such forecasts on investors is greater when the firms release contemporaneous bad news in earnings.

Test of H1b

H1b posits that the market's positive pricing of the news in management cash flow forecasts is greater (i.e., more positive) for firms in financial distress, controlling for total earnings news. The third columns in Table 3 Panels A and B present the results for testing this hypothesis. Consistent with the prediction, for firms in financial distress, results in Panel A shows that the market's positive pricing of the news in management cash flow forecasts is significantly greater (0.1166; t = 2.66; p < 0.01). Panel B shows stronger results with the reduced sample. The estimated coefficient on the interaction of financial distress and the news in management cash flow forecasts is 0.2497 (t = 4.84; p < 0.01). These findings indicate that management cash flow forecasts not only affect investors in general in terms of their differential pricings of earnings components, but the impact is substantially greater for firms in financial distress. These results lend strong support for H1b.

Test of H1c

H1c predicts that growth firms experience greater market pricing of their cash flow information contained in management cash flow forecasts than that of their accrual information. Columns 4 in Table 3 Panels A and B report the results for testing H1c. As expected, results from the full sample in Panel A suggest that, controlling for total earnings news, the market's positive pricing of the news in management cash flow forecasts is significantly greater for growth firms (0.0255; t = 2.20; p = 0.03). Panel B shows stronger results with the reduced sample that includes only observations with both management cash flow and earnings forecasts available on the forecast

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announcement day. The estimated coefficient on the news in management cash flow forecasts for growth firms is 0.2963 (t = 2.54; p = 0.01). These findings imply that the market's higher pricing of the cash flow news in management forecasts relative to that of the accrual information is substantially greater for growth firms. The results lend credence to H1c.

Test of H1d

H1d conjectures that controlling for total earnings news, the market's positive pricing of the news in management cash flow forecasts is greater (i.e., more positive) as the value relevance of reported cash flows relative to that of reported accruals increases. Table 4 presents the relations between stock returns and earnings components, estimated by industry-year using all *Compustat* firm-years with data necessary for computing variables. The estimated coefficients are used in computing the value relevance of reported cash flows relative to reported accruals in the year prior to management cash flow forecasts (year $t-1$). Consistent with the findings in prior studies, year $t-1$ ($t-2$) cash flow and accrual components of earnings are positively (negatively) associated with year $t-1$ stock returns. The means of the estimated coefficients by industry-year on year $t-1$ cash flows and accruals are 1.8205 (t = 22.17; p < 0.01) and 1.0690 (t = 14.78; p < 0.01), respectively. The estimated coefficients on year $t-2$ cash flows and accruals are -0.6075 (t = -6.92; p < 0.01) and -0.5708 (t = -7.06; p < 0.01), respectively. The value relevance of reported cash flows relative to that of reported accruals at the end of year $t-1$ is the difference between the estimated

coefficient on year $t-1$ cash flows and that on year $t-1$ accruals for each industry-year, as described in Section III.

Columns 5 in Table 3 Panels A and B present results for testing H1d. Consistent with the prediction, results with the full sample in Panel A show that, for firms that the cash flow component is more value-relevant than is the accrual component of earnings, the market's positive pricing to the news in management cash flow forecasts controlling for total earnings news is significantly greater (0.0181; $t = 3.38$; $p < 0.01$). Panel B shows the coefficient of the similar magnitude with the reduced sample. The estimated coefficient on the interaction of industry cash flow value relevance relative to accrual value relevance and the news in management cash flow forecasts is 0.0194 ($t = 1.84$; $p = 0.07$). These results support the argument in H1d that the market's positive pricing of cash flow news in management forecasts is greater as the value relevance of reported cash flows relative to that of reported accruals increases.

Joint test of H1a–H1d

In Table 5, I report test results from a combined model including all interactions of the news in management cash flow forecasts and alternative firm characteristics. The first column in Table 5 shows results with all observations in the full sample. H1a, H1b, and H1d are strongly supported. I find that controlling for total earnings news, the positive relation between market pricing and the news in management cash flow forecasts is greater for firms with contemporaneous bad news in earnings (0.5904; $t = 3.15$; $p < 0.01$), for firms in financial distress (0.1052; $t = 2.22$; $p = 0.03$), and for firms with relatively higher value relevance of reported cash flows than that of reported

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accruals (0.0148; t = 2.80; p < 0.01). As shown in the first column, the coefficient on

the interaction of growth firm indicator and the news in management cash flow

forecasts is positive, but is not significant at conventional levels (0.0889; t = 0.85; p =

0.39). The second column in Table 5 contains results for the reduced sample using only

observations with concurrent management earnings forecasts available. These results

lead to similar conclusions, except for H1d, where the coefficient is positive (0.0135)

and is marginally significant using a one-tailed test (t = 1.29; p = 0.20).

To summarize, I find evidence that the market prices cash flow information in

management cash flow forecasts more than it prices accrual information, supporting H1.

Furthermore, controlling for total earnings news, the positive relation between the

market pricing and the news in management cash flow forecasts is greater for firms with

contemporaneous bad news in earnings, for firms in financial distress, and for firms

with relatively higher value relevance of reported cash flows than that of reported

accruals. Results also show some support for H1c for growth firms.

Tests of H2 and H2a–H2d

As discussed in Section II, prior research concludes that corporate disclosure

policy affects financial analysts. When managers issue cash flow forecasts, information

asymmetry is reduced and analysts are able to converge their expectations toward those

of the managers and forecast earnings more accurately. H2 and H2a–H2d examine the

relation between management cash flow forecasts and analyst earnings forecast

revision, controlling for total earnings news. Specifically, I expect that analysts revise

their earnings forecasts more for the news in management cash flow forecasts than for

the news in accrual information. Additionally, H2a–H2d argue that the impact on analyst earnings forecast revisions is greater for firms with contemporaneous bad news in earnings, for firms in financial distress, for growth firms, and for firms with relatively higher value relevance of reported cash flows than that of reported accruals. I first provide results in Table 6 (Panels A and B) from individual tests of firm characteristics. I then show results in Table 7 from a combined test.

Test of H2

H2 predicts that analyst earnings forecast revisions relate positively to the news in management cash flow forecasts, controlling for total earnings news. In other words, analysts revise their earnings forecasts more positively (negatively) for the good (bad) news in management cash flow forecasts than for the news in accrual information.

The first columns in Table 6 Panels A and B show the results for testing H2. In Panel A, contemporaneous earnings news and analyst earnings forecast revision are positively related (0.0982; $t = 4.08$; $p < 0.01$), consistent with prior literature. The estimated coefficient on the news in management cash flow forecasts is 0.0526 ($t = 2.98$; $p < 0.01$), suggesting that analysts revise their earnings forecast $0.05 more upwardly (downwardly) for $1.00 good (bad) news management cash flow forecast than for the news in accrual information. This finding lends credence for H2.

In Panel B, I show stronger results with the reduced sample that includes only observations with both management cash flow and earnings forecasts available on the forecast announcement day. The estimated coefficient on the news in management cash flow forecasts is 0.1141 ($t = 5.83$; $p < 0.01$) and the estimated coefficient on the

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earnings news is 0.0794 (t = 3.64; p < 0.01). These results again support H2 that analysts revise their earnings forecasts $0.11 more for $1.00 news in management cash flow forecasts than for that in accrual information.

Similar to the conclusions in H1 that management cash flow forecasts affect investors, these forecasts also have an influence on analysts. Analysts respond to the news of cash flows contained in these forecasts beyond the existing earnings news by revising their earnings forecasts differently for cash flow and for accrual information.

Test of H2a

H2a posits that the positive relation between the news in management cash flow forecasts and analyst earnings forecast revision is greater (i.e., more positive) for firms with bad news in earnings. Columns 2 of Panels A and B in Table 6 report test results that support this argument. In Panel A, the estimated coefficient on the cash flow news is 0.1818 (t = 4.80; p < 0.01). This indicates that for firms that provide management cash flow forecasts, analysts revise their earnings forecast $0.18 more positively (negatively) for $1.00 good (bad) news in cash flows than they do for that in accruals when the firms have contemporaneous bad news in earnings. This finding provides strong support for H2. In Panel B, I show similar results with the smaller sample that includes only observations with both management cash flow and earnings forecasts available on the forecast announcement day. The estimated coefficient on the interaction of the indicator variable for bad earnings news and the news in management cash flow forecasts is 0.1247 (t = 3.39; p < 0.01). These results together lead to the conclusion that that controlling for total news in earnings, the positive relation between

analyst earnings forecast revision and the news in management cash flow forecasts is greater for firms with contemporaneous bad news in earnings. H2a is supported.

Test of H2b

H2b predicts that the positive relation between the news in management cash flow forecasts and analyst earnings forecast revision is greater (i.e., more positive) for firms in financial distress, controlling for total earnings news. Results from testing this hypothesis are presented in columns 3 of Panels A and B in Table 6. I do not find results supportive of H2b.

Test of H2c

H2c posits the positive relation between the news in management cash flow forecasts and analyst earnings forecast revision is greater (i.e., more positive) for growth firms, controlling for total earnings news. Results for testing this hypothesis are presented in columns 4 of Panels A and B in Tables 6. I do not find a greater positive relation as argued in H2c.

Test of H2d

H2d conjectures that controlling for total news in earnings, the positive relation between the news in management cash flow forecasts and analyst earnings forecast revision is greater (i.e., more positive) as the value relevance of reported cash flows relative to that of reported accruals increases. I find results consistent with the prediction in H2d using the full sample (as shown in column 4 of Panel A in Table 6).

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The estimated coefficient on the interaction of the news in management cash flow forecasts and the relative cash flow value relevance is 0.0034 (t = 1.64; p = 0.10). This suggests that for firms with relatively higher value relevance of reported cash flows than that of reported accruals, the revision in analyst earnings forecasts associated with news in management cash flow news is greater than that associated with the news in accrual information. Using the reduced sample with both management cash flow and earnings forecast available, the coefficient on the interaction of the news in management cash flow forecasts and industry cash flow value relevance is positive, but is not significant at conventional levels (0.0035; t = 1.18; p = 0.24).

Joint test of H2a–H2d

I report test results in Table 7 from a combined model including all interactions of the news in management cash flow forecasts and alternative firm characteristics. I present test results using the full sample in the first column and the reduced sample in the second column. Results again lend credence to H2a and H2d. For firms with contemporaneous bad news in earnings, analysts' revision of earnings forecasts following management cash flow forecasts are significantly greater (0.1617; t = 5.18; p < 0.01), controlling for total earnings news. For firms with relatively higher value relevance of reported cash flows than that of reported accruals, the positive relation between the news in management cash flow forecast and analyst earnings forecast revision is greater (0.0040; t = 2.57; p < 0.01). Tests using the reduced sample lead to similar conclusions, except for H2d, where the coefficient is positive (0.0035) and marginally significant using a one-tailed test (t = 1.34; p = 0.18).

To summarize, test results imply that management cash flow forecasts affect financial analysts. Analysts respond to cash flow information contained in management cash flow forecasts, controlling for total earnings news. In particular, they revise their earnings forecasts more positively (negatively) for the good (bad) news in management cash flow forecasts than for the news in accrual information. Furthermore, the positive relation between the news in management cash flow forecasts and analyst earnings forecast revisions is greater for firms with contemporaneous bad news in earnings, and for firms that reported cash flow component is more value-relevant than is reported accrual component of earnings. These conclusions identify cases in which management cash flow forecasts have greater impact on analysts.

Additional Tests of H2 and H2a–H2d

Additional tests related to H2 and H2a–H2d examine the relation between management cash flow forecasts and analyst earnings forecast properties. Specifically, analyst earnings forecast error and forecast dispersion are expected to be negatively related to the issuance of management cash flow forecasts. The negative relation is predicted to be greater (i.e., more negative) for firms with contemporaneous bad news in earnings, for firms in financial distress, for growth firms, and for firms with relatively higher value relevance of reported cash flows than that of reported accruals. Results from individual tests are listed in Tables 8–11. In Table 8 (9), I present results from the tests that investigate the relation between the issuance of management cash flow forecasts and analyst earnings forecast error (dispersion) in the month following

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management cash flow forecasts. Tables 10 and 11 display results of this relation using the change models. Finally, in Table 12, I report results using combined models.

Additional Test Corresponding to H2

As discussed in Section II, prior research concludes that corporate disclosure policy affects financial analysts. When managers issue cash flow forecasts, information asymmetry may be reduced and analysts are able to form more homogeneous expectations and forecast earnings more accurately. Thus, I contend that analyst earnings forecast error and forecast dispersion are smaller following management cash flow forecasts.

Using the level models (i.e., analyst earnings forecast error and dispersion in the month following the management cash flow forecast) the coefficient on the MCF indicator variable is -0.1057 (t $= -2.56$; p < 0.01) for forecast error (as shown in the first column of Table 8) and -0.0176 (t $= -2.17$; p $= 0.01$) for forecast dispersion (as shown in the first column of Table 9). These results suggest that the existence of a management cash flow forecast is associated with lower forecast error and dispersion, consistent with my argument. Using the change models (i.e., the changes in analyst earnings forecast error and dispersion from the month before and to the month after the management cash flow forecast), the coefficient on MCF is -0.0058 (t $= -1.72$; p $= 0.08$) for forecast error (as shown in the first column of Table 10) and -0.0026 (t $= -2.03$; p $= 0.04$) for forecast dispersion (as shown in the first column of Table 11). This is also consistent with the notion that management cash flow forecasts help analysts to forecast earnings more accurately with lower dispersion among individual analysts. The

results from both the level and the change models provide support that analyst earnings forecast error and forecast dispersion are significantly smaller for firms whose managers provide cash flow forecasts. Next, I test first individually (Tables 8–11) and then in a combined model (Table 12) for greater impact of the issuance of management cash flow forecasts on analysts who follow firms with certain characteristics, i.e., bad earnings news, financial distress, firm growth, and relative value relevance of reported cash flows.

Additional Test Corresponding to H2a–H2d

I posit that the negative relation between the issuance of management cash flow forecasts and analyst earnings forecast error and forecast dispersion is greater for firms with bad news in earnings, for financially distressed firms, for growth firms, and for firms with more value-relevant reported cash flows than reported accruals. Columns 2–5 in Tables 8 and 9 report results using the level models. Results in columns 5 indicate that the negative relations between the issuance of management cash flow forecasts and analyst forecast error (−0.0077; t = −2.61; p < 0.01) and forecast dispersion (−0.0017; t = −2.79; p < 0.01) are greater (i.e., more negative) for firms with relatively higher value relevance of reported cash flows than that of reported accruals. From these individual tests, I do not find consistent evidence that analysts forecast earnings better for firms with bad earnings news, in financial distress, or with more value-relevant reported cash flows than reported accruals, and whose managers provide cash flow forecasts.

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Additional joint test Corresponding to H2a–H2d

I report test results in Table 12 from a combined model including all interactions of the news in management cash flow forecasts and alternative firm characteristics. The results confirm the conjecture that for firms that reported cash flows are more value-relevant than reported accruals, the negative relation between the issuance of management cash flow forecast and analyst earnings forecast error (-0.0067; $t = 1.81$; $p = 0.07$) and forecast dispersion (-0.0018; $t = -2.85$; $p < 0.01$) is significantly greater, supported by the tests using level models. Test results from change models also show evidence for the greater negative relation between the issuance of management cash flow forecasts and analyst earnings forecast error (-0.0168; $t = -3.86$; $p < 0.01$) as the value relevance of reported cash flows relative to reported accruals increases.

In summary, additional tests suggest that management cash flow forecasts affect analyst earnings forecast properties. I document that analyst earnings forecast error and forecast dispersion are smaller for firms whose managers issue cash flow forecasts. In addition, some evidence exists that the effect is greater as the value relevance of reported cash flows relative to reported accruals increases.

Together with the results from analyst earning forecast revision tests, I provide evidence that management cash flow forecasts affect analysts. In general, analysts respond to management cash flow forecasts by revising their earnings forecasts. Analysts are also able to forecast earnings more accurately with smaller dispersion among individual analysts. Test results also lend some support that the degree of impact varies cross-sectionally based upon firm characteristics.

CHAPTER VI. CONCLUSIONS

I investigate voluntary disclosure in the area of management cash flow forecasts. Prior research focuses on management *earnings* forecasts and provides evidence that these voluntary forecasts affect the market's expectations and analysts' interpretations of firms' future prospects. However, to date, Wasley and Wu (2006) and Cao et al. (2009) are the only two studies that systematically examine management voluntary *cash flow* forecasts. Wasley and Wu (2006) study the *ex ante* determinants of management cash flow forecasts. Cao et al. (2009) use a subsample of Wasley and Wu (2006) and examine the incentives that lead managers to issue the less credible "soft-talk" cash flow forecasts that have ex post low verifiability.

My study differs from theirs in that I investigate the *ex post* impact of management cash flow forecasts on investors' differential pricing of cash flow and accrual information and on analysts' earnings forecasts. Specifically, I first test for how the market prices the news contained in management cash flow forecasts differently than it prices the news in accrual information. I predict and find a positive relation between the market's pricing and the news in management cash flow forecasts, controlling for total earnings news. I then distinguish sample firms according to their distinct characteristics and find that the market's positive pricing of the news in management cash flow forecasts is greater (i.e., more positive) for firms with contemporaneous bad news in earnings, for firms in financial distress, for growth firms, and for firms with higher value-relevant reported cash flows than that of reported accruals.

Secondly, I study the impact of management cash flow forecasts on analyst earnings forecasts. I examine whether analysts respond to the news in management cash flow forecasts, in the presence of total earnings news. Results support my hypothesis that analysts revise their earnings forecast more positively (negatively) to the good (bad) news in cash flow forecasts than to the news in accrual information. In addition, the positive relation between analyst earnings forecast revision and the news in management cash flow forecasts is greater for firms with bad news in earnings, and for firms with higher value relevance of reported cash flows relative to that of reported accruals.

Finally, I offer additional tests that examine whether the issuance of management cash flow forecasts affect analyst earnings forecast properties, i.e., forecast error and forecast dispersion. I find evidence that forecast error and dispersion are smaller for firms whose managers issue cash flow forecasts than for a matched sample of firms whose managers do not. I further investigate whether the impact differs among firms based on their characteristics. The results show some evidence that the relation between the issuance of management cash flow forecast and analyst earnings forecast error and forecast dispersion is more negative for firms with relatively higher value relevance of reported cash flows than that of reported accruals.

My study benefits investors (analysts) by facilitating their understanding of the circumstances under which analysts (investors) view management cash flow forecasts as informative. It also benefits managers in that empirical results shed light on the impact of their voluntary cash flow forecasts on capital market participants. They may learn about whether their forecasts have had the intended effects. In addition, my study

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potentially informs auditors. Over the past decade, there has been a dramatic increase in analyst and management cash flow forecasts. Auditors may be aware of such forecasts and are interested in the impact of these forecasts on the market because they are held responsible to review any information disclosed by the managers in the documents that accompany audited financial statements. In many cases, management cash flow forecasts are issued in conjunction with the release of audited financial statement. Finally, my study contributes to the voluntary disclosure literature by documenting how market participants respond to management cash flow forecasts. I find that these forecasts provide information to market participants (investors and analysts) beyond the existing earnings information. My findings also indicate that analysts forecast earnings better when management issues cash flow forecasts, as indicated by lower forecast error and lower forecast dispersion.

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APPENDIX
Variable Definitions with Corresponding Compustat Data Item Mnemonics

Variable	Definition
$CAR_{(d-1, d+1)}$	Three-day cumulated abnormal stock returns surrounding management cash flow forecast announcements. Subscript d refers to the day on which management cash flow forecast is released. Abnormal stock returns are raw returns minus value-weighted market index.
$REV_{(m-1, m+1)}$	The revision of analyst earnings forecasts for year t, calculated as the mean of analyst earnings forecasts in the month after minus that in the month before the management cash flow forecast, scaled by closing stock price two days $(d-2)$ before the management cash flow forecast. Subscript m refers to the month in which management cash flow forecast is issued.
CF_News_d	The news in management cash flow forecasts, measured as the difference between management forecasted cash flows on day d and the expected cash flows prior to the current forecast, scaled by stock closing price on day $d-2$. Expected cash flows are measured as either the cash flows forecasted by the management prior to day d or reported cash flows of year $t-2$.
E_News_d	Contemporaneous earnings news. It is calculated as the earnings forecasted by the management on day d minus the expected earnings, scaled by closing stock price on day $d-2$. Expected earnings are measured as the earnings forecasted by either the management or analysts before day d.
$|FE_t|$	The absolute value of analyst earnings forecast error for year t, scaled by the absolute value of the mean of analyst forecasts of earnings per share in month $m-1$. Analyst earnings forecast error is the difference between the mean of analyst earnings forecasts following the management cash flow forecast and the actual earnings per share reported on I/B/E/S.
$Disp_t$	Analyst earnings forecast dispersion for year t, measured as the standard deviation of the consensus analysts' forecasts of earnings per share following the management cash flow forecast, scaled by the absolute value of the mean of analyst earnings forecasts in month $m-1$.
$\Delta|FE_t|$	The change in the absolute values of analyst earnings forecast errors from the month before to after the management cash forecast for year t.
$\Delta Disp_t$	The change in analyst earnings forecast dispersions from the month before to the month after the management cash forecast for year t.
MCF_t	Indicator variable that equals 1 if the management issues a cash flow forecast in year t; 0 otherwise.
$NumEst_t$	The number of analysts following the firm in year t.

Variable	Definition
Bad_Earn_d	Indicator variable that equals 1 if $E\_News_d < 0$; 0 otherwise.
$Distress_{t-1}$	Financial distress at the end of year $t-1$, measured as Altman's Z-score (Z_{t-1}) multiplied by -1. Altman's Z-score is obtained from the following model:
	$$Z_{t-1} = 1.2WCAP_{t-1} + 1.4RE_{t-1} + 3.3EBIT_{t-1} + 0.999SALE_{t-1} + 0.6MVE_{t-1},$$
	where $WCAP$ is working capital (WCAP) scaled by total assets (AT), RE is retained earnings (RE) scaled by total assets, $EBIT$ is earnings before interest and taxes scaled (EBIT) by total assets, $SALE$ is sales scaled by total assets, and MVE is market value of equity (MV) divided by total liabilities. MV is calculated as the stock price at the end of the fiscal year (PRCC_F) multiplied by the number of shares outstanding (CSHO). Total liabilities are calculated as total shareholders' equity (SEQ) minus total assets.
$Growth_{t-1}$	Firm growth, measured as the market-to-book ratio at the end of year $t-1$. Market-to-book ratio is MV divided by the book value of equity (CEQ).
Ind_CF_{t-1}	The importance of the cash flow component relative to the accrual component of earnings for the industry for year $t-1$. It is equal to ρ_1 less ρ_2, which are estimated by industry-year from the model below:
	$$Ret_{t-1} = \rho_0 + \rho_1 * CF_{t-1} + \rho_2 * Accr_{t-1} + \rho_3 * CF_{t-2} + \rho_4 * Accr_{t-2} + \varphi_{t-1}.$$
	Ret_{t-1} refers to one-year buy-and-hold stock returns for year $t-1$, calculated as MV_{t-1} minus MV_{t-2} plus dividends (DVC) in year $t-1$, and divided by MV_{t-1}. CF_{t-1} refers to net cash flows from operating activities (OANCF) for year $t-1$. $Accr_{t-1}$ is accruals, measured as the difference between income before extraordinary items (IB) for year $t-1$ and CF_{t-1}. Earnings variables are scaled by MV_{t-2}. The model is estimated by industry-year with all firm-year observations available on Compustat. Variables in the model with values greater than 1.5 are eliminated. Industry classification is based on the first two digits of the SIC codes.

TABLE 1
Sample Selection

	Number of Observations
Management cash flow forecasts issued by firms traded on U.S. stock exchanges from 2004 to 2008	1,550
No point or range forecasts	(608)
No Compustat or CRSP data	(68)
Extreme CF_News_d [a]	(99)
Sample for testing H1	775
No I/B/E/S data for calculating $REV_{(m-1, m+1)}$	(147)
Sample for testing H2	628

[a]Observations in the 5 percent extreme tails of the distributions of CF_News_d are eliminated. See Appendix for variable definitions.

TABLE 2
Descriptive Statistics

Panel A. Distributions

Variable	N	Mean	Median	Standard Deviation	25%	75%
$CAR_{(d-1, d+1)}$	775	0.0027	0.0015	0.0685	−0.0265	0.0340
$REV_{(m-1, m+1)}$	628	0.0000	−0.0027	0.0142	−0.0018	0.0014
CF_News_d	775	0.0044	0.0000	0.0325	−0.0030	0.0096
E_News_d	775	0.0033	0.0000	0.0246	0.0000	0.0022
Bad_News_d	775	0.1817	0.0000	0.3859	0.0000	0.0000
$Distress_{t-1}$	728	0.3041	−0.3229	2.4360	−0.8038	0.3160
$Growth_{t-1}$	76.	4.4349	2.4478	8.9488	1.7969	4.0975
Ind_CF_{t-1}	769	0.0792	0.1097	3.6719	−0.0434	0.3782
$|FE_t|$	642	0.2679	0.0733	0.7393	0.0231	0.2490
$Disp_t$	642	0.0713	0.0253	0.1452	0.0126	0.0678
$\Delta|FE_t|$	460	0.0212	0.0028	0.0510	0.0000	0.0253
$\Delta Disp_t$	460	0.0069	0.0000	0.0197	0.0000	0.0087

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise.

TABLE 2 (CONTINUED)
Descriptive Statistics

Panel B. Correlations

	$CAR_{(d-1,\,d+1)}$	$REV_{(m-1,m+1)}$	CF_News_d	E_News_d	Bad_News_d	$Distress_{t-1}$	$Growth_{t-1}$	Ind_CF_{t-1}	$|FE_t|$	$Disp_t$	$\Delta|FE_t|$	$\Delta Disp_t$
$CAR_{(d-1,\,d+1)}$	1	**0.1944**	**0.1442**	**0.1342**	**−0.1830**	0.0900	**−0.0949**	−0.0033	0.0374	0.0225	−0.0684	0.0850
$REV_{(m-1,m+1)}$	**0.4138**	1	**0.1459**	**0.1821**	**−0.1627**	0.0678	**0.0862**	0.0654	**−0.1788**	**−0.1848**	**0.4452**	0.0733
CF_News_d	**0.1315**	**0.1780**	1	**0.1191**	**−0.1170**	0.0158	−0.0217	0.0209	0.0768	−0.0907	−0.0631	−0.0177
E_News_d	**0.2674**	**0.3577**	**0.0965**	1	**−0.3594**	−0.0335	**−0.1039**	0.0247	−0.0080	0.0115	−0.0262	0.0085
Bad_News_d	**−0.1728**	**−0.2306**	**−0.1217**	**−0.6931**	1	−0.0226	0.0433	−0.0225	−0.0536	−0.1339	**0.1462**	0.0005
$Distress_{t-1}$	0.0268	0.0700	0.0294	0.0417	**−0.0925**	1	**0.2317**	0.0451	**−0.1259**	−0.0019	**0.1103**	−0.0133
$Growth_{t-1}$	−0.0552	0.0439	0.0508	0.0271	0.0282	**0.2377**	1	0.0318	−0.0246	−0.0692	−0.0006	−0.1473
Ind_CF_{t-1}	0.0018	0.0258	−0.0084	−0.0252	−0.0073	0.0145	−0.0468	1	−0.0285	**−0.2372**	0.0086	−0.0306
$|FE_t|$	0.0399	−0.0260	0.0363	−0.0027	0.0455	**−0.1626**	**−0.1871**	0.0566	1	0.0529	**0.6070**	**−0.2012**
$Disp_t$	−0.0501	−0.0053	0.0090	−0.0287	0.0075	0.0546	**−0.3099**	0.0903	**0.2040**	1	**0.6454**	**0.4255**
$\Delta|FE_t|$	−0.0531	**0.1200**	−0.0805	−0.0781	0.0787	0.0428	**−0.1290**	0.0575	**0.3816**	**0.3194**	1	**−0.2087**
$\Delta Disp_t$	0.0159	0.0835	−0.0242	0.0413	−0.0125	−0.0472	**−0.1775**	0.0895	**0.1128**	**0.3336**	**0.1763**	1

See Appendix for variable definitions. Spearman (Pearson) correlations are below (above) the diagonal. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts in bold are significant at the 0.01 level.

TABLE 3
Market Pricing of the News in Management Cash Flow Forecasts:
Dependent Variable = $CAR_{(d-1, d+1)}$

Panel A. Full Sample

	(H1)	Firm Characteristics (FC)			
		Bad_Earn_d (H1a)	$Distress_{t-1}$ (H1b)	$Growth_{t-1}$ (H1c)	Ind_CF_{t-1} (H1d)
Intercept	0.0002	0.0056	0.0001	0.0031	0.0004
	(0.07)	(1.96)**	(0.04)	(1.11)	(0.17)
CF_News_d	**0.2895**	0.1588	0.2590	0.2056	0.2892
	(3.83)*	(1.85)*	(3.26)***	(2.47)***	(3.85)***
E_News_d	0.3263	0.2550	0.3684	0.2620	0.3613
	(3.32)***	(2.18)*	(3.35)***	(2.44)***	(3.44)***
CF_News_d*FC		**0.4775**	**0.1166**	**0.0255**	**0.0181**
		(2.70)*	**(2.66)***	**(2.20)**	**(3.38)***
E_News_d*FC		−0.3794	−0.0312	0.0248	−0.0417
		(−1.50)	(−0.55)	(1.48)	(−1.01)
FC		−0.0290	0.0018	−0.0006	0.0002
		(−4.07)***	(1.69)*	(−1.98)**	(1.28)
R^2	3.39%	5.83%	4.64%	3.82%	4.39%
N	775	775	728	765	769

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 3
Market Pricing of the News in Management Cash Flow Forecasts:
Dependent Variable = $CAR_{(d-1, d+1)}$

Panel B. Reduced Sample with Concurrent E_News_d

		Firm Characteristics (*FC*)			
		Bad_Earn_d	$Distress_{t-1}$	$Growth_{t-1}$	Ind_CF_{t-1}
	(H1)	*(H1a)*	*(H1b)*	*(H1c)*	*(H1d)*
Intercept	0.0036	0.0142	0.0039	0.0179	0.0032
	(0.07)	(3.90)***	(1.32)	(3.43)***	(1.09)
CF_News_d	**0.4041**	0.2049	0.4187	0.1445	0.4285
	(4.10)*	(1.64)*	(4.16)***	(1.05)	(4.36)***
E_News_d	0.2874	0.1329	0.2872	0.1834	0.3192
	(2.90)***	(1.11)	(2.63)***	(1.47)	(3.03)***
CF_News_d*FC		**0.4315**	**0.2497**	**0.2963**	**0.0194**
		(2.19)	**(4.84)***	**(2.54)***	**(1.84)*
E_News_d*FC		−0.2572	−0.1064	0.1506	−0.0379
		(−1.02)	(−1.85)*	(1.22)	(−0.93)
FC		−0.0376	0.0026	−0.0123	−0.0001
		(−5.07)***	(2.10)**	(−3.91)***	(−0.15)
R^2	4.97%	9.58%	10.25%	7.17%	7.38%
N	536	536	507	523	531

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 4
Regression of Stock Returns on Current and Lagged Operating Cash flows and
Accruals, Estimated by Industry-Year:
Dependent Variable = Ret_{t-1}

		Independent Variables			
N	**R^2**	CF_{t-1}	$Accr_{t-1}$	CF_{t-2}	$Accr_{t-2}$
476	35.64%	1.8205	1.0690	−0.6075	−0.5708
		(22.17)***	(14.78)***	(−6.92)***	(−7.06)***

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts reported are the means of regression coefficients estimated by industry-year (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 5
Market Pricing of the News in Management Cash Flow Forecasts:
Dependent Variable = $CAR_{(d-1, d+1)}$

	Full Sample	Sample with Concurrent E_News_d
Intercept	0.0179	0.0278
	(3.78)***	(4.89)***
CF_News_d	0.0411	0.0721
	(0.32)	(0.46)
E_News_d	0.2184	0.0632
	(1.46)	(0.42)
$CF\_News_d*Bad\_Earn_d$ (H1a)	**0.5904**	**0.5293**
	(3.15)*	**(2.49)***
$E\_News_d*Bad\_Earn_d$	−0.6647	−0.3121
	(−2.10)**	(−1.00)
$CF\_News_d*Distress_{t-1}$ (H1b)	**0.1052**	**0.2149**
	(2.22)	**(3.97)***
$E\_News_d*Distress_{t-1}$	0.0125	−0.0598
	(0.21)	(−0.98)
$CF\_News_d*Growth_{t-1}$ (H1c)	**0.0889**	**0.1478**
	(0.85)	**(1.24)**
$E\_News_d*Growth_{t-1}$	0.2014	0.1251
	(1.59)	(1.00)
$CF\_News_d*Ind\_CF_{t-1}$ (H1d)	**0.0148**	**0.0135**
	(2.80)*	**(1.29)**
$E\_News_d*Ind\_CF_{t-1}$	−0.0053	−0.0037
	(−0.07)	(−0.05)
Bad_Earn_d	−0.0248	−0.0322
	(−3.35)***	(−4.30)***
$Distress_{t-1}$	0.0026	0.0035
	(2.30)**	(2.71)***
$Growth_{t-1}$	−0.0125	−0.0136
	(−3.57)***	(−3.48)***
Ind_CF_{t-1}	0.0002	−0.0001
	(1.36)	(−0.19)
R^2	9.69%	17.78%
N	717	501

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 6
Analyst Incorporation of the News in Management Cash Flow Forecasts:
Dependent Variable = $REV_{(m-1, m+1)}$

Panel A. Full Sample

		Firm Characteristics (*FC*)			
		Bad_Earn_d	$Distress_{t-1}$	$Growth_{t-1}$	Ind_CF_{t-1}
	(H2)	*(H2a)*	*(H2b)*	*(H2c)*	*(H2d)*
Intercept	−0.0032	−0.0016	−0.0025	−0.0045	−0.0032
	(−5.76)***	(−2.47)***	(−5.20)***	(−4.66)***	(−5.64)***
CF_News_d	**0.0526**	−0.0031	0.0672	0.0639	0.0584
	(2.98)*	(−0.16)	(4.41)***	(2.45)***	(3.30)***
E_News_d	0.0982	0.0035	0.0799	0.0285	0.1012
	(4.08)***	(0.13)	(3.83)***	(1.02)	(4.10)***
CF_News_d*FC		**0.1818**	**−0.0110**	**−0.0054**	**0.0034**
		(4.80)*	**(−1.33)**	**(−0.25)**	**(1.64)***
E_News_d*FC		−0.0010	0.0042	0.0888	−0.0148
		(−0.67)	(0.41)	(3.55)***	(−0.92)
FC		0.3111	0.0004	0.0013	0.0002
		(5.39)***	(1.95)*	(1.90)*	(3.31)***
R^2	4.37%	13.51%	6.41%	6.59%	6.22%
N	628	628	601	615	627

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 6
Analyst Incorporation of the News in Management Cash Flow Forecasts:
Dependent Variable = $REV_{(m-1, m+1)}$

Panel B. Reduced Sample with Concurrent E_News_d

	(H2)	Firm Characteristics (FC)			
		Bad_Earn_d (H2a)	$Distress_{t-1}$ (H2b)	$Growth_{t-1}$ (H2c)	Ind_CF_{t-1} (H2d)
Intercept	−0.0027	−0.0001	−0.0025	−0.0028	−0.0027
	(−4.71)	(−0.12)	(−4.31)***	(−2.78)***	(−4.69)***
CF_News_d	**0.1141**	0.0540	0.1179	0.1079	0.1186
	(5.83)*	(2.27)***	(6.11)***	(4.09)***	(5.97)***
E_News_d	0.0794	−0.0321	0.0686	0.0048	0.0868
	(3.64)***	(−1.28)	(3.14)***	(0.19)	(3.84)***
CF_News_d*FC		**0.1247**	**−0.0158**	**−0.0077**	**0.0035**
		(3.39)*	**(−1.54)**	**(−0.35)**	**(1.18)**
E_News_d*FC		−0.0025	0.0039	0.0991	−0.0226
		(−1.82)*	(0.34)	(4.33)***	(−1.47)
FC		0.3467	0.0004	0.0003	−0.0000
		(6.83)***	(1.57)	(0.39)	(−0.13)
R^2	10.87%	23.89%	11.32%	12.50%	10.79%
N	470	470	453	462	469

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 7
Analyst Incorporation of the News in Management Cash Flow Forecasts:
Dependent Variable = $REV_{(m-1, m+1)}$

	Full Sample	Sample with Concurrent E_News_d
Intercept	−0.0008	0.0003
	(−0.91)	(0.34)
CF_News_d	0.0493	0.0655
	(2.13)**	(2.35)**
E_News_d	−0.0513	−0.0687
	(−1.98)*	(−2.48)***
$CF\_News_d*Bad\_Earn_d$ (H2a)	**0.1617**	**0.1242**
	(5.18)*	**(3.36)***
$E\_News_d*Bad\_Earn_d$	0.2406	0.2422
	(4.41)***	(4.18)***
$CF\_News_d*Distress_{t-1}$ (H2b)	**−0.0012**	**0.0041**
	(−0.14)	**(0.40)**
$E\_News_d*Distress_{t-1}$	−0.0093	−0.0112
	(−0.91)	(−1.00)
$CF\_News_d*Growth_{t-1}$ (H2c)	**−0.0136**	**−0.0139**
	(−0.75)	**(−0.66)**
$E\_News_d*Growth_{t-1}$	0.0748	0.0759
	(3.57)***	(3.42)***
$CF\_News_d*Ind\_CF_{t-1}$ (H2d)	**0.0040**	**0.0035**
	(2.57)*	**(1.34)**
$E\_News_d*Ind\_CF_{t-1}$	−0.0194	−0.0171
	(−1.39)	(−1.12)
Bad_Earn_d	−0.0015	−0.0017
	(−1.20)	(−1.34)
$Distress_{t-1}$	0.0003	0.0004
	(1.41)	(1.49)
$Growth_{t-1}$	0.0000	−0.0006
	(0.04)	(−0.86)
Ind_CF_{t-1}	0.0002	0.0001
	(5.12)***	(0.94)
R^2	23.04%	20.99%
N	591	448

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

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TABLE 8
The Impact of Management Cash Flow Forecasts on
Analyst Earnings Forecast Error:
Dependent Variable = $|FE_t|$

		Firm Characteristics (*FC*)			
	Full Sample	*Bad_Earn$_d$*	*Distress$_{t-1}$*	*Growth$_{t-1}$*	*Ind_CF$_{t-1}$*
Intercept	0.3314	0.3361	0.3195	0.3928	0.3182
	(7.59)***	(6.08)***	(7.00)***	(6.24)***	(7.50)***
MCF_t	**−0.1057**	−0.1507	−0.0932	−0.1071	−0.1037
	(−2.56)*	(−2.74)***	(−2.16)**	(−1.42)	(−2.58)***
MCF_t*FC		**0.1232**	**−0.0012**	**0.0251**	**−0.0077**
		(1.30)	**(−0.14)**	**(0.43)**	**(−2.61)***
FC		−0.0039	0.0014	−0.0890	−0.0007
		(−0.06)	(0.52)	(−2.04)**	(−0.31)
$Numest_t$	0.0011	0.0005	−0.0021	−0.0007	0.0006
	(0.32)	(0.14)	(−0.06)	(−0.21)	(−0.20)
R^2	0.37%	0.48%	0.17%	0.55%	1.55%
N	1,284	1,126	1,180	1,220	1,282

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. The full sample consists of 642 observations with management cash flow forecasts and 642 control firms matched on industry, year, and size without management cash flow forecasts. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 9
The Impact of Management Cash Flow Forecasts on
Analyst Earnings Forecast Dispersion:
Dependent Variable = *Disp$_t$*

		Firm Characteristics (*FC*)			
	Full Sample	*Bad_Earn$_d$*	*Distress$_{t-1}$*	*Growth$_{t-1}$*	*Ind_CF$_{t-1}$*
Intercept	0.0960	0.0743	0.0845	0.0999	0.0951
	(11.22)***	(7.29)***	(9.98)***	(8.52)***	(11.21)***
MCF$_t$	**−0.0176**	−0.0150	−0.0175	0.0024	−0.0182
	(−2.17)**	(−1.45)	(−2.20)**	(0.17)	(−2.26)**
MCF$_t$*FC		**−0.0098**	**−0.0002**	**−0.0114**	**−0.0017**
		(−0.56)	**(−0.11)**	**(−1.05)**	**(−2.79)*****
FC		0.0414	0.0002	−0.0175	−0.0000
		(3.31)***	(0.40)	(−2.16)**	(−0.09)
Numest$_t$	−0.0015	−0.0008	−0.0012	−0.0011	−0.0015
	(−2.39)**	(−1.27)	(−1.87)*	(−1.85)*	(−2.38)**
R^2	0.72%	1.91%	0.48%	1.82%	1.91%
N	1,284	1,126	1,180	1,220	1,282

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile
unless noted otherwise. The full sample consists of 642 observations with management
cash flow forecasts and 642 control firms matched on industry, year, and size without
management cash flow forecasts. Amounts reported are regression coefficients (with t-
statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level
using a two-tailed test.

TABLE 10
The Impact of Management Cash Flow Forecasts on the Change in Analyst Earnings Forecast Error:
Dependent Variable = $\Delta|FE_t|$

	Full Sample	Firm Characteristics (FC)			
		Bad_Earn_d	$Distress_{t-1}$	$Growth_{t-1}$	Ind_CF_{t-1}
Intercept	0.0237	0.0214	0.0238	0.0203	0.0237
	(6.47)***	(4.87)***	(6.44)***	(4.00)***	(6.47)***
MCF_t	**−0.0058**	−0.0090	−0.0039	−0.0023	−0.0057
	(−1.72)*	(−2.08)**	(−1.14)	(−0.37)	(−1.70)*
MCF_t*FC		**0.0100**	**0.0004**	**−0.0013**	**0.0004**
		(1.31)	**(0.73)**	**(−0.27)**	**(1.40)**
FC		0.0096	0.0001	0.0043	−0.0001
		(1.81)*	(0.73)	(1.22)	(−0.89)
$Numest_t$	0.0000	0.0001	−0.0002	−0.0003	0.0000
	(0.14)	(0.30)	(−0.66)	(−1.26)	(0.12)
R^2	0.11%	1.83%	−0.07%	0.14%	0.10%
N	920	842	866	890	920

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. The full sample consists of 460 observations with management cash flow forecasts and 460 control firms matched on industry, year, and size without management cash flow forecasts. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 11
The Impact of Management Cash Flow Forecasts on the Change
in Analyst Earnings Forecast Dispersion:
Dependent Variable = $\Delta Disp_t$

		Firm Characteristics (FC)			
	Full Sample	**Bad_Earn$_d$**	**Distress$_{t-1}$**	**Growth$_{t-1}$**	**Ind_CF$_{t-1}$**
Intercept	0.0076	0.0097	0.0073	0.0082	0.0075
	(5.37)***	(5.64)***	(5.03)***	(4.05)***	(5.29)***
MCF_t	**−0.0026**	−0.0054	−0.0019	−0.0005	−0.0026
	(−2.03)**	(−3.23)***	(−1.44)	(−0.19)	(−1.99)**
MCF_t*FC		**0.0080**	**−0.0003**	**−0.0015**	**0.0001**
		(2.66)**	**(−1.25)**	**(−0.81)**	**(1.33)**
FC		−0.00402	0.0001	−0.0002	−0.0002
		(−1.94)**	(1.12)	(−0.12)	(−3.04)***
$Numest_t$	0.0001	0.0000	0.0000	−0.0000	0.0001
	(0.51)	(0.225)	(0.21)	(−0.14)	(0.57)
R^2	0.26%	0.90%	0.10%	0.09%	1.08%
N	920	842	866	890	920

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. The full sample consists of 460 observations with management cash flow forecasts and 460 control firms matched on industry, year, and size without management cash flow forecasts. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.

TABLE 12
The Impact of Management Cash Flow Forecasts on
Analyst Earnings Forecast Properties

	Dependent Variable			
	$|FE_t|$	$Disp_t$	$\Delta|FE_t|$	$\Delta Disp_t$
Intercept	0.4998	0.0959	0.1689	0.0631
	(6.18)***	(7.16)***	(1.75)*	(1.88)*
MCF_t	−0.2897	−0.0249	−0.0810	−0.0322
	(−3.03)***	(−1.57)	(−0.70)	(−0.80)
$MCF_t*Bad\_Earn_d$	**0.1158**	−0.0139	**−0.1816**	**−0.0455**
	(1.18)	(−0.85)	**(−1.51)**	**(−1.09)**
$MCF_t*Distress_{t-1}$	**0.0125**	**0.0025**	**0.0076**	**0.0014**
	(0.84)	**(1.04)**	**(0.44)**	**(0.24)**
$MCF_t*Growth_{t-1}$	**0.1211**	**0.0057**	**0.0631**	**0.0283**
	(1.77)*	**(0.50)**	**(0.78)**	**(1.00)**
$MCF_t*Ind\_CF_{t-1}$	**−0.0067**	**−0.0018**	**−0.0168**	**−0.0007**
	(−1.81)*	**(−2.85)*****	**(−3.86)*****	**(−0.46)**
Bad_Earn_d	−0.0294	0.0289	0.2225	0.0434
	(−0.42)	(2.48)***	(2.65)***	(1.48)
$Distress_{t-1}$	0.0015	0.0002	−0.0015	−0.0002
	(0.54)	(0.40)	(−0.48)	(−0.17)
$Growth_{t-1}$	−0.1630	−0.0223	−0.0824	−0.0355
	(−3.08)***	(−2.55)***	(−1.31)	(−1.62)
Ind_CF_{t-1}	−0.0025	−0.0002	−0.0004	−0.0003
	(−0.80)	(−0.32)	(−0.11)	(−0.36)
$Numest_t$	0.0009	−0.0008	−0.0055	−0.0006
	(0.26)	(−1.37)	(−1.17)	(−0.36)
R^2	2.68%	5.11%	4.97%	−0.28%
N	1,022	1,022	860	860

See Appendix for variable definitions. Variables are winsorized at 1 and 99 percentile unless noted otherwise. The sample for the level (change) model consists of 511 (430) observations with management cash flow forecasts and 511 (430) control firms matched on industry, year, and size without management cash flow forecasts. Amounts reported are regression coefficients (with t-statistics in parentheses). *, **, *** indicates significant at the 0.10, 0.05, 0.01 level using a two-tailed test.