Analyst Expectations, Capital Markets and Cash Flow versus Accrual Expectations Management

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ABSTRACT

Prior literature shows firms manage analysts' earnings expectations downward to avoid negative earnings surprises. However, we know very little as to whether firms manage analysts' expectations of operating cash flow and/or accrual components of earnings to meet or beat analysts' cash flow and earnings forecasts, and which firm characteristics motivate firms to engage in the expectations management strategies. This study decomposes earnings expectations management into its two mutually exclusive and collectively exhaustive parts: cash flow expectations management and accrual expectations management. It then examines whether cross-sectional differences in the likelihood of firms engaging in downward cash flow or accrual expectations management depend on firm-specific characteristics. Overall, we find that firms with lower cash flow growth and firms that miss prior-period cash flow forecasts engage in downward cash flow expectations management, and these firms engage in downward cash flow expectations management over and above downward accrual expectations management. We also find firms with better financial health, larger market share, lower institutional ownership and less bloated balance sheets are likely to walk down both analysts' cash flow and accrual forecasts. Finally, we document that the capital market reacts more favorably in the short window relative to the long window to firms that engage in upward cash flow (or accrual) management and downward cash flow (or accrual) expectations management.

1. INTRODUCTION

The accounting literature (Matsumoto 2002; Bartov et al. 2002; Roychowdhury 2006; Gunny 2010) identifies three mechanisms firm managers use to avoid negative earnings surprises: (1) real earnings management, (2) accrual earnings management and (3) earnings expectations management.[1,2] While the earnings management literature has extensively examined how firms manipulate accruals and operating cash flows to meet or beat earnings and cash flow forecasts, it is unclear whether firms manage analysts' expectations using the operating cash flow or accrual components of expected earnings. Moreover, there is no empirical evidence on firm-specific characteristics that motivate managers to walk down the cash flow versus accrual components of expected earnings. Much of the prior literature focuses on downward earnings expectations management. However, if managers pay attention to the separate cash flow and accrual components of earnings and make decisions to walk down analysts' earnings forecasts via cash flows and accruals independently or jointly, it is important for researchers and practitioners to understand the nature and determinants of downward earnings expectations management via cash flows and accruals. In particular, researchers should consider the differential effect of cash flow versus accrual expectations management when examining the association between earnings expectations management and the probability of meeting or beating analysts' earnings and cash flow forecasts. As for practitioners, while investors could monitor which firms are more likely to walk down analysts' cash flow and/or accrual forecasts and make investing decisions accordingly, analysts can better anticipate management guidance of earnings components and make cash flow and/or accrual forecast revisions more accurately.

Because earnings are the sum of accruals and operating cash flows (Sloan 1996), firms can manage analysts' expectations via operating cash flows and/or accruals in order to meet or beat analyst cash flow and/or accrual forecasts.[3] We therefore decompose earnings expectations

[1] Managers engage in the first two mechanisms by manipulating real operating activities or accrual estimates upwards respectively to increase reported earnings. In contrast, managers engage in earnings expectations management by utilizing public and/or private communication channels to guide analysts' earnings forecasts downwards to a beatable level without affecting reported earnings directly.

[2] McVay (2006) proposes classification shifting as another earnings management tool. We focus on the accrual versus cash flow-based tools that managers use to meet or beat earnings and cash flow forecasts, and therefore, we do not examine classification shifting of items within the income statement.

[3] Analysts do not issue accrual forecasts directly. However, when analysts issue both earnings and cash flow forecasts, one can infer analysts' accrual forecasts by subtracting their cash flow forecasts from their earnings forecasts.

management (EXM) into its two mutually exclusive and collectively exhaustive components: cash flow expectations management (CXM) and accrual expectations management (AXM).[4] Consistent with prior research on EXM (Matsumoto 2002; Bartov et al. 2002), we define CXM (AXM) as management's actions to guide analysts' cash flow (accrual) forecasts downward to avoid negative cash flow (accrual) surprises. Downward cash flow (accrual) expectations management can be viewed as multi-round negotiations between managers and analysts before analysts publish their final forecasts. Therefore, in order to walk down analysts' forecasts successfully, managers must consider firm-specific characteristics while taking into account analysts' willingness to revise their forecasts downwards.

To motivate the importance of EXM decomposition, we first show (in Appendix B1) that a one percent increase in downward CXM (AXM) increases the probability of reported cash flows (accruals) meeting or beating analysts' cash flow (accrual) forecasts by 4% (5%). In addition, we show (in Appendix B2) that downward CXM rather than downward AXM helps firms to simultaneously meet or beat both analysts' cash flow and earnings forecasts. Specifically, a one percent increase in downward CXM increases the probability of meeting or beating both cash flow and earnings forecasts by 2%.

We then examine four research questions to provide insights regarding the determinants of and the trade-offs between the use of downward CXM and downward AXM, as well as market responses to firms' use of the available cash flow and accrual strategies.[5] Using a sample of firm-year observations with both analysts' cash flow and earnings forecasts between 1995 and 2010, we find that firms engaging in downward CXM tend to: (1) have lower cash flow growth and (2) miss prior-period cash flow forecasts. To be specific, a decline in reported operating cash flows from a prior period reduces the probability that firms will meet or beat cash flow forecasts in the current period if they have limited abilities to manipulate their reported cash flows upwards. Therefore, managers of firms with lower cash flow growth are more effective in walking down analysts' cash flow forecasts than higher cash flow growth firms. Similarly, firms that miss prior-period cash flow forecasts are likely to experience difficulty in manipulating their

[4] We use the following terms interchangeably: earnings expectations management via cash flows (accruals), cash flow (accrual) expectations management, downward cash flow (accrual) guidance, walking down cash flow (accrual) forecasts, and downward CXM (AXM).

[5] It is possible that firms manage analysts' expectations of cash flows and accruals upwards. However, since the expectations management literature focuses on downward guidance, we follow the same definition and focus on cases where firms engage in downward CXM and/or AXM.

reported cash flows upwards to avoid negative cash flow surprises. Nonetheless, given the existence of cash flow targets, managers of these firms have stronger incentives to walk down cash flow forecasts to a beatable level.

An examination of the determinants of downward AXM shows that firms in the pre-SOX (post-SOX) period are more (less) likely to engage in downward AXM. Our result is consistent with Bartov et al. (2009) who find a decline (increase) in both accrual management and earnings expectations management (real earnings management) in the post-SOX period. Despite no direct impact on firms' reported accrual levels, downward AXM involves managing analysts' expectations of accrual estimates which are highly scrutinized by regulators in the post-SOX period, so managers are more likely to perceive higher costs in walking down analysts' accrual forecasts in the post-SOX period. Unlike downward CXM determinants, we find no association between downward AXM and accrual growth or accrual forecast uncertainty. We attribute these results to the argument that, compared to analysts' implied accrual forecasts, analysts' cash flow forecasts are more salient to managers and analysts (e.g., Call et al. 2009; McInnis and Collins 2011).

We also find firms in better financial condition and firms with market leader status are more likely to engage in both downward CXM and downward AXM since the consequence of missing either cash flow or accrual targets are likely to be higher for these firms. Firms with lower institutional ownership and firms with less bloated balance sheets (i.e., firms with higher accounting flexibility) engage in both downward CXM and downward AXM perhaps because they are less scrutinized by investors and regulators in general.

After identifying the determinants of downward CXM and AXM, we examine the trade-off between these two strategies. Consistent with our results regarding the determinants of downward CXM, we find that the likelihood of firms engaging in downward CXM versus downward AXM differs if they have lower cash flow growth and/or miss cash flow forecasts in the prior period. In contrast, while we find firms in better financial condition, firms with lower institutional ownership and firms with less bloated balance sheets engage in both downward CXM and AXM, our results suggest firms with these characteristics are more likely to walk down cash flow than accrual forecasts. Collectively, our results suggest that firm-specific characteristics play an important role in explaining management's use of downward CXM and/or AXM in order to meet or beat cash flow and earnings forecasts.

An examination of the market response to firms' use of the cash flow and accrual-based tools indicates that the investors react more favorably to firms' use of these four strategies in short window relative to long window. To be specific, on the one hand, the meet or beat premium over the three days around the earnings announcement date is not discounted for firms using any of the four tools. On the other hand, the meet or beat premium over the long window is discounted significantly when firms adopt any of the four strategies.

In addition to the main empirical analyses discussed above, we perform several sensitivity analyses to examine whether our results are robust to a different model specification (logistic regression model) and/or an alternative measure of downward CXM and downward AXM. We use the Heckman two-stage procedure (Heckman 1979) to address a potential sample selection bias issue that can arise from using a non-random sample of firms with analysts' cash flow forecasts in addition to earnings forecasts. Overall, the results (untabulated) are qualitatively similar to results in our main analyses, confirming our primary findings that firms with lower cash flow growth and firms that miss prior period cash flow targets are more likely to walk down analysts' cash flow forecasts.

Our study makes three important contributions to the extant literature. First, we provide the first evidence on the interplay between the use of downward cash flow and accrual expectations management to meet or beat analysts' forecasts. Second, we provide the first evidence that managers differentially walk down accrual and cash flow components of analysts' earnings expectations, suggesting researchers and practitioners should consider the differential effects of cash flow and accrual expectations management when examining the association between earnings expectations management and the likelihood of meeting or beating analysts' earnings and cash flow forecasts. Third, our capital market tests suggest that firms are more effective in adopting the cash flow and accrual strategies over the short window (relative to the long window) to maintain the meet or beat premium. Our research is important to analysts, investors, managers, and regulators who are interested in the following: (i) the existence and economic significance of downward earnings guidance via cash flows and accruals to meet or beat analysts' forecasts, (ii) firm-specific characteristics that explain cross-sectional differences in downward cash flow or accrual expectations management, and (iii) circumstances where firms are more likely to engage in cash flow than accrual expectations management.

The remainder of our study is organized as follows: Section 2 discusses related literature and develops research questions. Section 3 describes our sample selection and research design. Section 4 presents empirical analyses and Section 5 concludes.

2. RELATED LITERATURE AND RESEARCH QUESTIONS

2.1 Motivations to decompose earnings expectations management

Research on cash flow expectations management as a mechanism to meet or beat cash flow forecasts is scarce even though empirical findings suggest firms have capital market incentives to meet or beat both analysts' earnings and cash flow forecasts (e.g., Melendrez et al. 2008; Brown et al. 2013). To our knowledge, the only study that discusses and models the association between analysts' walking down cash flow forecasts and the likelihood of meeting or beating cash flow forecasts is Brown and Pinello (2011) who investigate conditions under which firms meet or beat cash flow forecasts but miss earnings forecasts. However, one critical assumption which distinguishes cash flow expectations management in our study from Brown and Pinello (2011) is that we define total earnings expectations management as the sum of cash flow expectations management and accrual expectations management (i.e., EXM = CXM + AXM) whereas Brown and Pinello (2011) assume that CXM and EXM are two different mechanisms. Moreover, the authors examine only cases where firms engage in CXM but not in EXM.

Prior literature decomposes earnings into operating cash flows and accruals (Sloan 1996), suggesting that analysts' earnings forecasts can be decomposed into cash flow and accrual forecasts. To be specific, we propose firm managers use cash flow (accrual) strategies to meet or beat analysts' cash flow (accrual) forecasts.[6] Prior literature (Melendrez et al. 2008; Brown et al. 2013) defines MBBOTH as firms that meet or beat both cash flow (MBC) and earnings forecasts (MBE) perhaps, because most analysts do not explicitly provide accrual forecasts and managers view analysts' cash flow and earnings forecasts as more salient targets. Therefore, we follow prior literature and define MBBOTH similarly in this study.

As a validation test, we first demonstrate the importance of decomposing EXM into CXM and AXM (Appendices B1 and B2). Similar to prior studies which examine earnings

[6] Figure 2 summarizes the two cash flow (upward CFO management, downward CXM) and two accrual (upward accrual management, downward AXM) management strategies.

management strategies and firm characteristics that affect firms' likelihood of meeting or beating analysts' earnings forecasts (e.g., Matsumoto 2002; McInnis and Collins 2011), We model the association between cash flow (accrual) management strategies and the probability of meeting or beating analysts' cash flow (accrual) forecasts in Appendix B1.[7] Using a sample period between 1995 and 2010, we find upward CFO management and downward CXM (upward accrual management and downward AXM) are used to meet or beat cash flow (accrual) forecasts.[8] As for MBBOTH (Appendix B2), we find upward CFO management and downward EXM are used to MBBOTH. Upward accrual management is negatively associated with MBBOTH. The decomposition model provides similar results regarding upward CFO management (positive relation) and upward accrual management (negative relation). Downward CXM (AXM) is positively (negatively) associated with MBBOTH. This suggests an overall marginal and positive effect of EXM on meeting or beating both cash flow and earnings forecasts are driven by downward CXM. Specifically, while prior literature shows firms use downward EXM to MBE either independently or jointly with other tools, our study shows managers walk down earnings forecasts via cash flows to MBBOTH. Because our sample consists of firms with both earnings and cash flow forecasts, walking down the cash flow component of earnings (downward CXM) alone can help firms meet or beat cash flow and earnings forecasts simultaneously. This approach is more effective and less costly than walking down both cash flow and accrual forecasts (downward CXM and downward AXM) since walking down accrual forecasts does not help firms MBC. Collectively, results from the decomposition models suggest firm managers rely on upward CFO management and downward CXM to MBBOTH (marginal effects are 3% for ABCFO and 2% for CXM). We interpret these findings as evidence of managers differentially walking down separate earnings components.[9]

[7] While prior studies model the association between downward EXM and MBE, our study models the association between downward EXM (downward CXM) [downward AXM] and MBBOTH (MBC) [MBA].
[8] Because of a high correlation between CXM and AXM (Spearman correlation = 0.57) and ABCFO and ABACC (Spearman correlation = 0.25), we orthogonalize these variables before including them in all models. The superscript "O" denotes orthogonalized variables.
[9] We do not examine upward cash flow and/or accrual expectations management in this study. However, untabulated results suggest managers do not use upward cash flow and/or accrual guidance to meet or beat analysts' forecasts.

2.2 Expectations management literature

As noted by Bartov et al. (2002), research on earnings expectations management (EXM) received more attention after the 1980s from accounting researchers following Brown's (2001) and Matsumoto's (2002) findings of a significant increase in cases where firms' actual earnings per share are equal to or slightly exceed analysts' earnings forecasts. This evidence suggests firms guide analysts' earnings forecasts downwards to beatable targets and that this phenomenon is pervasive across firms. Consistent with this argument, Matsumoto (2002) finds that firm managers use EXM to avoid negative earnings surprises. Similarly, Burgstahler and Eames (2006) report managers engage in EXM to avoid reporting earnings decreases and losses. Richardson et al. (2004) provide empirical evidence suggesting that capital market incentives (e.g., managerial incentives to sell stock after the earnings announcement date) motivate firm managers to walk down analyst earnings forecasts to a beatable level.

One feature that distinguishes earnings expectations management from real and accrual earnings management is that firm managers can utilize public and/or private communication to guide analysts' earnings expectations downwards without affecting firms' reported earnings directly. Prior literature (Richardson et al. 2004; Cotter et al. 2006; Versano and Trueman 2015) suggests there are various forms of public communication that managers can use to walk down analysts' forecasts, such as management disclosures of earnings forecasts in press releases and/or earnings conference calls. In contrast, private forecast guidance is usually conducted in the form of private meetings or phone calls between firm managers and sell-side analysts.

Earlier research has documented that public and private earnings expectations management are prevalent in the US setting (Brown et al. 2015; Soltes 2014). Our study contributes to the earnings expectations management literature by further examining the existence of downward cash flow and accrual expectations management and firm-specific characteristics that explain cross-sectional difference in the likelihood of firms engaging in downward CXM versus AXM. For instance, while prior literature shows managers use quarterly and/or annual downward EXM to meet or beat earnings forecasts (e.g., Houston et al. 2010; Call et al. 2014; Koch et al. 2012), our study shows managers engage in annual downward CXM (AXM) to meet or beat both earnings and cash flow forecasts (accrual forecasts) accounting for other available earnings management strategies. In particular, because prior literature (Melendrez et al. 2008; Brown et al. 2013) finds the capital markets reward firms that MBBOTH, our finding

that walking down cash flow forecasts helps firms meet or beat both earnings and cash flow forecasts introduces downward CXM as an important and effective expectations management strategy for firms with certain characteristics (e.g., firms with lower cash flow growth and firms that miss prior-period cash flow forecasts).

2.3 Earnings and cash flow management literature

According to Gunny (2010, p.855), earnings management can be classified into two categories: accruals management and real activities manipulation. Because earnings are the sum of accruals and operating cash flows and because investors do not fully adjust their earnings expectations for information in accruals and cash flows (Sloan 1996), managers can manipulate accrual and/or cash flow components of total earnings in an effort to meet or beat earnings benchmarks (Xu et al. 2007). Accruals management occurs when managers use accounting discretion within GAAP to choose accounting methods and biased estimates to manipulate earnings (Xu et al. 2007, Gunny 2010), such as premature revenue recognition, delayed expense recognition, and big bath restructuring charges.

While accruals management has been examined extensively in the accounting literature, real earnings management did not receive much attention before Graham et al.'s (2005) survey evidence of the prevalence of real activities manipulation in practice and the development of real earnings management measures by Roychowdhury (2006). Roychowdhury (2006) defines real earnings management (REM) as "departures from normal operational practices, undertaken with the primary objective of meeting certain earnings thresholds" (p. 337). Managers can use their discretion to cut R&D expenses or offer price discounts as part of their normal operational activities. However, if the level of real activities manipulation is abnormally high, this suggests that managers are engaging in REM to meet or beat their earnings targets.

Recent cash flow management studies propose several mechanisms firm managers use to manipulate reported operating cash flows upward without increasing reported earnings. For instance, Lee (2012) shows firms inflate reported CFO through classification shifting and transaction timing.[10] Frankel et al. (2012) find firms manage non-cash working capital to

[10] Classification refers to shifting items among the statement of cash flow categories (e.g., classifying tax benefits of stock options as operating in lieu of financing activities). Timing refers to managers' use of timing to adjust working capital to increase reported CFO (e.g., delaying payments to suppliers or accelerating collections from customers).

temporarily increase reported CFO in the fourth fiscal quarter. Taken together, the evidence from the cash flow management literature suggests firm managers have economic incentives to manipulate both reported CFO and reported earnings. We find evidence that managers use downward CXM (AXM) to MBC (MBA), adding to the earnings and cash flow management literatures by demonstrating two important strategies managers use to avoid negative cash flow and accrual surprises.

2.4 Research questions

To decide whether to engage in earnings expectations management via operating cash flows or accruals, managers must assess the pros and cons of both strategies, taking into consideration other available tools such as upward cash flow and accrual management.[11,12] Because expectations management strategies involve both managers and analysts, managers must also anticipate analysts' reaction to management cash flow and/or accrual guidance (i.e., whether analysts will make a downward revision or not). We examine whether managers (analysts) make decisions to manage analysts' expectations downwards (revise forecasts downwards) based on firm-specific characteristics. More specifically, we identify and test whether the following firm-specific characteristics are associated with firms' propensity to engage in downward CXM and/or downward AXM.

We identify three firm characteristics specific to reported operating cash flows (accruals) which is likely to incentivize firm managers to engage in downward CXM (AXM) as discussed in detail below: (1) cash flow (accrual) growth, (2) missing prior-period cash flow (accrual) forecasts, and (3) cash flow (accrual) forecast uncertainty.

First, we examine whether firms with lower cash flow (accrual) growth from the immediately prior year manage analysts' cash flow (accrual) expectations downwards. Burgstahler and Dichev (1997) show managers use earnings management to avoid earnings decreases, suggesting managers have incentives to maintain increasing earnings pattern. Therefore, lower cash flow (accrual) growth suggests firms have limited abilities to manipulate cash flows (accruals) upwards to meet or beat cash flow (accrual) forecasts, increasing firm

[11] Figure 2 summarizes the two cash flow (upward CFO management, downward CXM) and two accrual (upward accrual management, downward AXM) management strategies.
[12] We refrain from discussing the use of real earnings management as another tool because REM is highly correlated with upward CFO management strategies and we focus on cash flow versus accrual management strategies.

managers' motivation to walk down analyst cash flow (accrual) forecasts. Analysts are also more likely to revise their forecasts of lower cash flow (accrual) growth firms downwards than upwards to avoid upsetting investors for being too optimistic while currying favor with management by enabling them to report cash flows (accruals) that meet or beat cash flow (accrual) forecasts.

Second, Das et al. (2011) find managers are likely to use downward EXM as a substitutive tool when firms have constraints on using upward earnings management tools. Matsumoto (2002) suggests firms are likely to experience negative market reactions if they walk down earnings forecasts too early in the period. Taken together, prior literature suggests firm managers are incentivized to initially use upward earnings management and switch to downward earnings guidance later in the period. Based on this evidence, it implies that firms that miss cash flow (accrual) forecasts in the prior period are likely to have difficulty in manipulating their reported cash flows (accruals) upwards to avoid negative cash flow (accrual) surprises. However, given the existence of cash flow (accrual) targets, we examine whether firm managers are incentivized to walk down cash flow (accrual) forecasts to a beatable level in the current period.

Third, Matsumoto (2002) finds earnings forecast uncertainty to be negatively associated with the probability of meeting or beating earnings forecasts. We extend this theory to cash flow (accrual) forecasts, and examine whether a low cash flow (accrual) forecast uncertainty environment (i.e., small absolute cash flow or accrual forecast error) provides a more precise range for firm managers and analysts to revise cash flow (accrual) forecasts downwards to a beatable level.

Our first research question is as follows:

RQ1: Do firm characteristics specific to reported cash flow (accrual) incentivize managers to walk down analysts' cash flow (accrual) forecasts?

Firms facing constraints to manipulate reported CFO (accruals) upwards will consider engaging in upward accrual (CFO) management, downward CXM, or downward AXM. Lee (2012) finds evidence that firms manipulate reported CFO upward to meet or beat analyst cash flow forecasts, suggesting firms with constraints on upward CFO management are more likely to turn to downward CXM to increase the probability of meeting or beating cash flow and earnings forecasts. Focusing on the trade-off between real and accrual earnings management, Zang (2012) identifies a set of costs for real activities manipulation and accrual management to meet or beat

earnings targets. Because the literature is unclear regarding the trade-off between upward CFO (accrual) management and earnings expectations management, we examine whether firm-specific factors identified by Zang (2012) lead to downward CXM, downward AXM, or both. Thus, our rationale for examining these firm-specific factors is related to but differs from Zang's study.

Similar to Zang, we investigate four firm-specific characteristics: (1) financial health, (2) market-leader status in the industry, (3) institutional ownership, and (4) accounting flexibility, but unlike Zang, we examine if these factors incentivize managers to engage in downward CXM and/or AXM.[13] Poor financial health firms have liquidity and solvency issues. Because of high bankruptcy risks, poor financial health firms have less flexibility to adjust timing for non-cash working capital to increase reported CFO and earnings and are likely to turn to downward CXM and/or AXM to improve cash flow and earnings performance. Using a sample of firms with both earnings and cash flow forecasts, McInnis and Collins (2011) show firms in better financial health are more likely to meet or beat earnings forecasts. This suggests firms in better financial health generally have stronger incentives to meet or beat analysts' cash flow and accrual forecasts because the consequence of missing these targets are relatively more severe. Analysts are also relatively more likely to go along with these firms to curry favor with management and to obtain investment banking opportunities. Therefore, firms in better financial health are more likely to walk down cash flow and/or accrual forecasts.

Firms closely monitored by institutional investors are less likely to manipulate reported CFO upwards (Zang 2012). For instance, if they temporarily increase non-cash working capital in the fourth quarter of the current year, institutional investors can detect the reversal nature of this strategy in the first quarter of the following year. Thus, these firms are likely to turn to downward CXM and/or AXM to improve reported CFO and earnings. Alternatively, it can be argued that firms with lower levels of institutional ownership have more flexibility to engage in any type of expectations management, thus leading to downward CXM and/or AXM.

Because they generate a large volume of sales relative to other firms in the industry, market leaders are more capable of engaging in transaction timing to inflate reported CFO than

[13] We do not include tax incentives from Zang (2012) in our study because the marginal tax rate and the level of book-tax conformity discussion is more relevant to the trade-off between real and accrual earnings management. We also exclude the scrutiny of auditors because auditors generally do not audit management guidance.

market-follower firms (Zang 2012).[14] For instance, their large proportion of sales enhances their ability to obtain cash discounts from suppliers, delay cash paid to suppliers, or accelerate cash collections from customers than market followers. Also, their greater bargaining power makes them relatively more likely to be effective in walking down cash flow and/or accrual forecasts to a beatable level. In contrast, market followers incur higher costs to manage CFO upwards so they are motivated to turn to downward CXM and/or AXM as a less costly tool to lower analysts' cash flow and/or accrual estimates and avoid negative cash flow and accrual surprises.

Barton and Simko (2002) show firms with bloated balance sheets (i.e., firms with cumulative income-increasing accruals in prior periods) have less flexibility to engage in accrual management, making it more likely they will turn to downward CXM and/or AXM. On the other hand, managers of firms with less bloated balance sheets are likely to have less aggressive accounting estimates, resulting in higher earnings quality. Thus, firms with higher accounting flexibility (i.e., firms with less bloated balance sheets) will be more effective in convincing analysts to revise their cash flow and/or accrual forecasts downwards.

In addition to the four firm specific factors identified by Zang (2012), another potential factor that is likely to incentivize firm managers to engage in downward CXM and/or AXM is the enactment of SOX (i.e., pre- versus post-SOX period).[15] Cohen et al. (2008) document a significant decline (increase) in upward accrual management (upward CFO management) in the post-SOX period. However, it is unclear whether the pre or post-SOX period experienced more downward CXM and/or AXM (i.e., firms have constraints on managing reported accruals upwards so they are likely to switch to downward CXM and/or AXM in the post-SOX period). Nevertheless, since Bartov et al. (2009) find a significant decline in both downward EXM and upward accruals management in the post-SOX period, suggesting firm managers perceive higher costs of engaging in any type of expectations management strategies post-SOX so they reduce the use of downward CXM and/or AXM. On the one hand, analysts are willing to revise their forecasts downwards in the post-SOX period to provide a more conservative benchmark. On the

[14] We refer to transaction timing more often than classification shifting as a way to manipulate reported CFO upwards due to the more frequent use of the former strategy in practice.

[15] We do not examine pre- versus post-Regulation FD (Reg FD) period because Reg FD impacts the forms of earnings expectations management (i.e., Reg FD prohibits private earnings guidance) rather than the components of earnings expectations management (i.e., CXM versus AXM). In contrast, SOX was enacted mainly to address accrual related scandals.

other hand, analysts are willing to ignore management guidance if they perceive higher detection costs in this period.

Our second research question is as follows:

RQ2: Do other firm-specific characteristics incentivize managers to walk down analysts' cash flow and/or accrual forecasts?

For practical implications, it is important to understand which firm-specific characteristics motivate managers to walk down cash flow forecasts, accrual forecasts, or both. Thus, after identifying factors that incentivize managers to walk down analysts' earnings forecasts via cash flows and/or accruals, we examine whether the factors represent a trade-off between downward CXM and downward AXM. Because our sample consists of firms with both earnings and cash flow forecasts, walking down the cash flow component of earnings (downward CXM) alone can be sufficient to meet or beat cash flow and earnings forecasts simultaneously. Thus, it can be argued that firms with the aforementioned characteristics are more likely to engage in downward CXM rather than downward AXM. On the other hand, because downward AXM helps firms to meet or beat accrual forecasts which leads to an increase in the probability of meeting or beating earnings forecasts, firms with certain characteristics are likely to be incentivized to engage in downward CXM and downward AXM similarly to meet or beat both forecasts.

Our third research question is as follows:

RQ3: Do firms trade-off between downward CXM and downward AXM?

The expectations management literature documents several market consequences from using EXM to achieve earnings targets. For example, Bartov et al. (2002) find capital markets reward firms that meet or beat analysts' earnings expectations through EXM after controlling for the period's earnings forecast error. On the other hand, Matsumoto (2002) suggests market penalties for the use of EXM. Specifically, she suggests that walking down analysts' earnings forecasts too early in the fiscal period will lead to lower or negative stock prices at the forecast revision and/or earnings announcement dates. Das et al. (2011) examine the market consequences of accruals management and earnings expectation management. Although they find the market premium from meeting or beating earnings forecasts (MBE) is discounted for firms that use accrual management and EXM either independently or jointly, the net stock price

benefit from MBE outweighs the cost of doing so, suggesting that capital market incentives exist for firm managers to continue relying on EXM to MBE.

Although we document that firms use upward CFO management and downward CXM (upward accrual management and downward AXM) to MBC (MBA) as discussed in Section 2.1, it is unclear how the investors respond to firms' use of all four strategies within the same period. Focusing on the differential effect between cash flow (upward CFO management and downward CXM) and accrual (upward accrual management and downward AXM) strategies, we examine whether there are market penalties to the use of cash flow and accrual tools, and whether there are any incremental market penalties to the use of cash flow (accrual) tools to MBC (MBA), controlling for other available accrual (cash flow) tools.

Our fourth research question is as follows:

RQ4: How does the market respond to firms' use of upward cash flow and accrual management and downward CXM and AXM?

3. SAMPLE SELECTION AND RESEARCH DESIGN

3.1 Sample selection

I/B/E/S began collecting analysts' cash flow forecasts in 1993 (DeFond and Hung 2003) so we use annual earnings and cash flow forecasts from I/B/E/S for the years, 1995 to 2010 to test our hypotheses.[16] Some of our variables require data in periods t-2, t-1 and t+1 so we test our hypotheses using the period 1995 to 2010. In addition to I/B/E/S analysts' forecasts and actuals, we obtain main test variables and control variables from COMPUSTAT, CRSP and EVENTUS.

3.2 Measures of downward cash flow and accrual expectations management[17]

Because managerial guidance of analysts' earnings and cash flow forecasts cannot be directly observed, the earnings management literature proposes several proxies to measure earnings expectations management. Following prior literature (e.g., Bartov et al. 2002; Brown and Pinello 2007; Das et al. 2011), we measure the magnitude of earnings (cash flow) expectations management as the first consensus analyst forecast minus the last consensus analyst forecast of earnings (cash flows) per share, scaled by average total assets and multiplied by 100

[16] We use annual data because most cash flow forecasts are provided on an annual basis (McInnis and Collins 2011). We do not include 1993 and 1994 because the data are scarce in the first two years.
[17] All variables are defined in Appendix A.

to express earnings (cash flow) expectations management as a percentage. Because analysts do not explicitly provide forecasts of accruals, we estimate accrual expectations management as the difference between earnings and cash flow expectations management, and downward accruals guidance as a positive value of this difference. *EXM*, *CXM*, and *AXM* are continuous variables of earnings, cash flow and accrual expectations management, respectively. Following Brown and Pinello (2007), firm-year observations must satisfy the following criteria to be included in the sample: (1) at least two individual forecasts are made at least 20 trading days apart, (2) the earliest forecast must be issued at least one trading day after the prior year's earnings release, and (3) the latest forecast must be issued at least three trading days before the current year's earnings release.

3.3 Measures of determinants of downward cash flow and/or accrual expectations management

We use the following three proxies to test cash flow (accrual) specific factors (RQ1). First, cash flow growth *(CFOGR$_t$)* [accrual growth *(ACCGR$_t$)*] is measured as the ratio of change in reported operating cash flows (accruals) to prior year's operating cash flows (accruals). Prior-period meeting or beating cash flow forecast *(PMBC$_t$)* [prior-period meeting or beating accrual forecasts *(PMBA$_t$)*] is an indicator variable equal to one if firms MBC (MBA) in the prior year and zero otherwise. Cash flow forecast uncertainty *(ABCFE$_t$)* [accrual forecast uncertainty *(ABAFE$_t$)*] is measured as absolute value of the initial cash flow (accrual) forecast error, deflated by prior year price. We use the four proxies suggested by Zang (2012) to test RQ2. First, we use Altman's z-score at the beginning of the year (*ZSCORE$_{t-1}$*) to proxy for firm's financial health. Second, we use percentage of institutional ownership at the beginning of the year *(INST$_{t-1}$)* to proxy for level of institutional investors. Third, we use market share at the beginning of the year *(MKSHARE$_{t-1}$)*, which is defined as the ratio of a company's sales to total sales of its industry to proxy for market leader. Fourth, following Barton and Simko (2002), we use net operating assets at the beginning of the year *(BLOAT$_{t-1}$)* to proxy for firms' limited flexibility to engage in accrual manipulations. Post-SOX period (*POSTSOX$_t$*) is an indicator variable equal to one if fiscal year is greater than 2002 and zero otherwise.

3.4 Measures of upward cash flow and accrual management

Following Dechow et al. (1998), and adopted by Roychowdhury (2006), Call (2008), Zhang (2008), and Lee (2012), we define normal operating cash flows as a function of sales and change in sales in the current period, and ABCFO is reported CFO minus normal CFO estimated from the model. We use abnormal operating cash flows or ABCFO to measure the level of abnormal CFO. Using the COMPUSTAT database, we estimate this model for each industry-year group between 1995 and 2010 that contains a minimum of 15 observations.

We use the forward-looking model in Dechow et al. (2003) to estimate abnormal accruals or ABACC as our primary measure of AEM.[18] ABACC is the difference between the reported accruals and the normal accruals estimated from the model. Using the COMPUSTAT database, we estimate this model for each industry-year between 1995 and 2010 that contains a minimum of 15 observations.

3.5 Measures of market responses to the use of cash flow and accrual-based strategies

Following the definitions of market response to earnings expectations management in Das et al. (2011), we use *CAR* (*BHAR*) as a proxy for the short-window (long-window) cumulative abnormal return. *CAR* is defined as the daily average cumulative abnormal return computed over the three days around the earnings announcement date. *BHAR* is defined as the daily average buy-and-hold abnormal return computed from two trading days after the first consensus forecast in the year until two trading days after the earnings announcement date.[19]

[18] We choose this model because Dechow et al. (2003) show the explanatory power of the forward-looking model is significantly higher than the well-known modified Jones model (i.e., the mean adjusted R^2 increases from 9.2% for the modified Jones model to 20% for the forward-looking model).

[19] We also used the earlier of the earnings announcement date or the cash flow announcement date (both from IBES) as the event date. The results (untabulated) were qualitatively similar to those using the earnings announcement date. Overall, 63.4% of firm-year observations have the same earnings and cash flow announcement dates. For 99.2% of the observations the earnings announcement date was earlier than the cash flow announcement date, with 47% of the observations having the earnings announcement date within 7 days of the cash flow announcement date. Our understanding is that when the two dates are different, it is because IBES has recorded the 10-K filing date as the cash flow announcement date. Most prior literature has assumed that cash flow information is available on the same date as the earnings announcement (e.g., Defond and Hung 2003). They argue that cash flow information is typically provided in the press release or during earnings conference calls that commonly accompany earnings announcements. In these cases, IBES would have recorded the same dates for both earnings and cash flows.

3.6 Empirical models for testing RQ1-4

Test of Determinants of Downward CXM and/or AXM (Test of RQ1 and RQ2)

To test firm-specific characteristics that motivate firm managers to walk down analyst cash flow and/or accrual forecasts, we estimate the following two OLS regression models.

$$CXM_t = \alpha_0 + \alpha_1 CFOGR^O_t + \alpha_2 PMBC_t + \alpha_3 ABCFE^O_t + \alpha_4 ZSCORE_{t-1} + \alpha_5 INST_{t-1} + \alpha_6 MKSHARE_{t-1} + \alpha_7 BLOAT_t + \alpha_8 POSTSOX_t + \alpha_9 FOLLOW_t + \alpha_{10} EARN_t + \alpha_{11} SIZE_t + \alpha_{12} MB_t + \alpha_{13} LIT_t + \alpha_{14} RD_{t-1} + \alpha_{15} ABCFO^O_t + \alpha_{16} ABACC^O_t + \alpha_{17} AXM_t + \alpha_{18} ACCGR^O_t + \alpha_{19} ABAFE^O_t + \varepsilon_t \quad \text{Eq.(1)}$$

$$AXM_t = \beta_0 + \beta_1 ACCGR^O_t + \beta_2 PMBA_t + \beta_3 ABAFE^O_t + \beta_4 ZSCORE_{t-1} + \beta_5 INST_{t-1} + \beta_6 MKSHARE_{t-1} + \beta_7 BLOAT_t + \beta_8 POSTSOX_t + \beta_9 FOLLOW_t + \beta_{10} EARN_t + \beta_{11} SIZE_t + \beta_{12} MB_t + \beta_{13} LIT_t + \beta_{14} RD_{t-1} + \beta_{15} ABCFO^O_t + \beta_{16} ABACC^O_t + \beta_{17} CXM_t + \beta_{18} CFOGR^O_t + \beta_{19} ABCFE^O_t + \varepsilon_t \quad \text{Eq.(2)}$$

All main variables of interest are defined in Sections 3.3 and 3.4. To mitigate correlated omitted variables, we include all cash flow and accrual variables in both equations. However, because of high correlations between the cash flow and accrual variables, we use a modified Gram–Schmidt procedure (Golub and Van Loan 1996) to orthogonalize these variables before including them in Eq.(1) and Eq.(2).[20] The superscript "O" denotes orthogonalized variables. Significant positive or negative coefficients on $CFOGR^O$, $ABCFE^O$ and *PMBC* [$ACCGR^O$, $ABAFE^O$ and *PMBA*] suggest that each of these firm characteristics is associated with downward cash flow [accrual] expectations management (RQ1). Significant positive or negative coefficients on *ZSCORE, INST*, *MKSHARE*, *BLOAT*, and *POSTSOX* suggest each of these firm characteristics motivate firm managers to walk down cash flow and/or accrual forecasts.

Following Roychowdhury (2006) and Lee (2012), we include *EARN*, *SIZE* and *MB* as control variables. *EARN* is included to control for the level of earnings. *SIZE* and *MB* control for differences in firm size and growth opportunities, respectively. $ABCFO^O$, $ABACC^O$ and *AXM* (*CXM*) control for the potential effect of other available tools on *CXM (AXM)*. Following Roychowdhury (2006), *FOLLOW* controls for the relative number of analysts providing cash

[20] The (Spearman [Pearson] correlation between *CFOGR* and *ACCGR* = 0.31 [0.03]; Spearman [Pearson] correlation between *ABCFE* and *ABAFE* = 0.73 [0.84]; Spearman [Pearson] correlation between *ABCFO* and *ABACC* = -0.26 [-0.21]).

flow forecasts to number of analysts providing earnings forecasts for each firm-year. *LIT* controls for the potential lawsuit effect on firms' incentives to avoid negative earnings surprises (Matsumoto 2002). *RD* controls for the effect of proprietary information costs on firms' propensity to issue bad news information (Verrecchia 1983, Kross et al. 2011). We also include all accrual (cash flow) specific determinants to mitigate correlated omitted variables in Eq.1 (Eq.2).

Test of Determinants of Downward CXM over AXM (Test of RQ3)

To determine firm-specific characteristics that motivate firm managers to walk down analyst cash flow rather than accrual forecasts, we estimate the following logistic regression model.

$$\begin{aligned} Prob\ (CXM\_OA = 1)_t = {} & \delta_0 + \delta_1 CFOGR^O_t + \delta_2 PMBC_t + \delta_3 ABCFE^O_t + \delta_4 ZSCORE_{t-1} \\ & + \delta_5 INST_{t-1} + \delta_6 MKSHARE_{t-1} + \delta_7 BLOAT_t + \delta_8 POSTSOX_t + \delta_9 ACCGR^O_t \\ & + \delta_{10} ABAFE^O_t + \delta_{11} FOLLOW_t + \delta_{12} EARN_t + \delta_{13} SIZE_t + \delta_{14} MB_t + \delta_{15} LIT_t \\ & + \delta_{16} RD_{t-1} + \delta_{17} ABCFO^O_t + \delta_{18} ABACC^O_t + \varepsilon_t \end{aligned} \quad \text{Eq.(3)}^{21}$$

We use the probability of firms engaging in downward CXM over downward AXM as the main dependent variable. Significant positive or negative coefficients on $CFOGR^O$, $ABCFE^O$ and *PMBC* ($ACCGR^O$ and $ABAFE^O$) suggest that each of these cash flow (or accrual) specific characteristics is associated with the likelihood of firms engaging in downward CXM over downward AXM. Significant positive or negative coefficients on *ZSCORE, INST*, *MKSHARE*, *BLOAT*, and *POSTSOX* suggest each of these firm characteristics motivate firm managers to walk down cash flow forecasts rather than accrual forecasts.

Test of Market Response to Upward Cash Flow and Accrual Management and Downward Cash Flow and Accrual Expectations Management (Test of RQ4)

To provide an insight of the market response to firms' use of upward cash flow and accrual management and downward CXM and AXM, we estimate the following two OLS regression models.

[21] We do not include *PMBA* variable in this equation because *PMBC* and *PMBA* are highly correlated (Pearson/Spearman correlation = -0.85) and we cannot orthogonalize indicator variables.

$$CAR_t = \mu_0 + \mu_1 CXM^O{}_t + \mu_2 AXM^O{}_t + \mu_3 ABCFO^O{}_t + \mu_4 ABACC^O{}_t + \mu_5 CFE^O{}_t + \mu_6 AFE^O{}_t + \mu_7 MBC_t + \mu_8 MBA_t + \mu_9 SIZE_t + \mu_{10} MB_t + \mu_{11} MBC*CXM_t + \mu_{12} MBC*ABCFO_t + \mu_{13} MBA*AXM_t + \mu_{14} MBA*ABACC_t + \varepsilon_t \quad \text{Eq. (4)}$$

$$BHAR_t = \lambda_0 + \lambda_1 CXM^O{}_t + \lambda_2 AXM^O{}_t + \lambda_3 ABCFO^O{}_t + \lambda_4 ABACC^O{}_t + \lambda_5 CFE^O{}_t + \lambda_6 AFE^O{}_t + \lambda_7 MBC_t + \lambda_8 MBA_t + \lambda_9 SIZE_t + \lambda_{10} MB_t + \lambda_{11} MBC*CXM_t + \lambda_{12} MBC*ABCFO_t + \lambda_{13} MBA*AXM_t + \lambda_{14} MBA*ABACC_t + \varepsilon_t \quad \text{Eq. (5)}$$

Similar to prior studies (e.g., Bartov 2002, Das et al. 2011) but consistent with our focus of cash flow and accrual components, we include the current period cash flow and accrual forecast errors (CFE^O and AFE^O) as control variables in both equations. We also include four interaction variables for each of the four strategies to provide a complete understanding of the net effect on stock prices from the use of these strategies to MBC and MBA.[22] Other variables are defined previously and included in Appendix A.

4. EMPIRICAL ANALYSES

4.1 Descriptive statistics and univariate analyses

Panel A of Table 1 presents sample selection of earnings and cash flow data that satisfy all three criteria of Brown and Pinello (2007) for calculating *EXM* and *CXM.* Firm-year observations with complete first and last I/B/E/S consensus earnings and cash flow forecasts between 1995 and 2010 are 48,203 and 9,497 respectively. Panel B of Table 1 presents sample selection for main data analyses. Final firm-year observations for hypotheses testing after removing missing COMPUSTAT and I/B/E/S variables are 4,353.[23] Based on the final sample (n=4,353), 56.37% (66.67%) [39.38%] of our sample meet or beat cash flow (earnings) [both cash flow and earnings] forecasts (untabulated results). This evidence is consistent with McInnis and Collins (2011) who document that 53.4% (66.4%) [37.4%] of their sample meet or beat cash flow (earnings) [both cash flow and earnings] forecasts.

Table 2 reports descriptive statistics for the final sample. The means of *CXM* (0.009), *AXM* (0.001) are positive suggesting the existence of downward expectations management in general (despite small positive values). In addition, 50.9% of the sample firm-years are more likely to engage in downward CXM than in downward AXM. Means of all orthogonalized variables are 0.000 with standard deviations of 1.000.

[22] All cash flow and accrual related variables are orthogonalized similar to the empirical tests of RQ1-3.
[23] Our sample drops about 2,112 firm-year observations after including prior-period variables.

4.2 Multivariate analyses

4.2.1 Results of RQ1 and RQ2 (Determinants of downward CXM and/or AXM)

Table 3 presents OLS regression results of Eq.(1) which examines the determinants of downward CXM. Coefficients on $CFOGR^{O}$ and *PMBC* are negative and statistically significant at the 0.05 level. In other words, due to firms' limited abilities to manipulate reported CFO upwards, firms with lower cash flow growth and firms that miss prior-period cash flow targets are likely to walk down cash flow forecasts in order to meet or beat cash flow targets in the current period. $ABCFE^{O}$ is not associated with *CXM*, suggesting cash flow forecast uncertainty does not explain cross-sectional differences in downward CXM.

Table 4 presents OLS regression results of Eq.(2) which examines the determinants of downward AXM. Unlike Table 3 results, $ACCGR^{O}$ and $ABAFE^{O}$ are not associated with *AXM*. *PMBA* is positively associated with *AXM* but the relation is marginally significant at the 0.10 level. Taken together, our results suggest accrual specific factors do not play an important role in explaining cross-sectional differences in downward AXM. Nevertheless, we find that *POSTSOX* is negatively associated with *AXM* . While prior literature suggests the existence of downward EXM in the pre-SOX period, our results provide further evidence that managers use (do not use) downward AXM (downward CXM) in the pre-SOX period. Because accrual related information is less scrutinized by external parties in the pre-SOX period, managers are likely to perceive lower costs of walking down analysts' accrual forecasts and rely on this strategy to meet or beat earnings forecasts via accruals.

Based on the results of Tables 3 and 4, several firm specific characteristics are found to be associated with both downward CXM and downward AXM, which are equivalent to firms engaging in downward EXM. Specifically, we find firms in better financial condition and firms with market leader status are likely to engage in both downward CXM and downward AXM, perhaps because the consequences of missing either cash flow or accrual targets are higher for these firms, and these firms have sufficient resources to engage in both strategies in the same period. In addition, firms with lower institutional ownership (*INST*) and firms with less bloated balance sheets (*BLOAT*) engage in both downward CXM and downward AXM, consistent with their being less scrutinized by the investors and regulators.

4.2.2 Results of RQ3 (Trade-off between downward CXM and downward AXM)

Table 5 present logistic regression results of Eq.(3) for testing RQ3. We find that the likelihood of firms engaging in downward CXM versus downward AXM differs for firms with lower cash flow growth and firms that miss cash flow forecasts in the prior period. To be specific, a one-unit decrease in cash flow growth increases the probability of firms engaging in downward CXM rather than downward AXM by 3%. The probability of firms engaging in downward CXM over downward AXM increases by 6% for firms that miss prior-period cash flow targets. These results are consistent with the Table 3 results which examine determinants of downward CXM. In contrast, while we find firms with better financial condition, lower institutional ownership, and less bloated balance sheets engage in both downward CXM and AXM, the trade-off results suggest firms with these characteristics are more likely to walk down cash flow than accrual forecasts. Furthermore, contrary to our prediction, firms with lower accrual forecast uncertainty are marginally likely to walk down cash flow rather than accrual forecasts. As discussed in Section 3, we require that our sample consists of firms with both analysts' earnings and cash flow forecasts to calculate downward CXM and AXM. Given that these firms have two explicit targets to achieve, the less costly and more effective strategy is to walk down analysts' earnings forecasts via cash flows, which will increase the probability of meeting or beating both earnings and cash flow forecasts. In other words, guiding analysts' accrual forecasts downwards will help firms meet or beat earnings forecasts via accruals, but will not necessarily increase the likelihood of exceeding analysts' cash flow expectations. This can explain why we find firms with certain characteristics are more likely to walk down cash flow forecasts than accrual forecasts in this setting. Nonetheless, because of an increasing number of firms with both earnings and cash flow forecasts, our findings should be relevant to other studies that examine a similar setting. Taken together, our results suggest that firm-specific characteristics play an important role in explaining management's use of downward CXM and/or AXM in order to meet or beat cash flow and earnings forecasts.

4.2.3 Results of RQ4 (Market Response to Upward Cash Flow and Accrual Management and Downward Cash Flow and Accrual Expectations Management)

Table 6 present OLS regression results of Eq.(4) and Eq.(5) for testing short-window and long-window market response to the four cash flow and accrual strategies. For short window

(Models 1 and 2), we find that only $ABCFO^O$ is associated with *CAR*, suggesting that firms' use of upward cash flow management generates positive returns. The coefficient on *ABACC* is insignificant in all four models which is consistent with results of Das et al. (2011) who find that the use of upward accrual management does not increase any incremental return penalties. While the insignificant coefficients on CXM^O and AXM^O (Models 1 and 2) suggest no additional market return penalties for short window around the earnings announcement date, we show that firms' use of CXM and AXM generates negative market returns for long window (Models 3 and 4). The latter results are consistent with prior studies (e.g., Matsumoto 2002; Das et al. 2011) which document market penalties from using expectations management. Therefore, we provide further evidence that the return penalties are larger for long-window relative to short-window test after controlling for all other available tools and analysts' forecast errors. Coefficients on *MBC* and *MBA* are positive and significant in all four models which are expected and consistent with prior literature. The insignificant coefficients on the four interaction terms included in Model (2) suggest that the meet or beat premium for short-window test is not reduced for firms engaging in any of the four strategies as shown in the sum of the coefficient tests (p-value < 0.01 for all four strategies). In contrast, while the coefficients on most interaction variables in Model (4) are insignificant (except for *MBA*AXM*), the meet or beat premium for long-window test is reduced significantly such that the net effect on stock prices when using any of these four strategies is not statistically different from zero as shown in the sum of the coefficient tests (p-value > 0.10 for all four strategies). To summarize, the results from Table 6 indicate that the market reacts more favorably to firms that engage in any of the four strategies in short window relative to long window.[24]

5. CONCLUSIONS

In this study we identify several firm characteristics that incentivize managers to walk down cash flow and/or accrual forecasts while controlling for other available tools. Specifically, our results show that firms with lower cash flow growth and firms that miss prior-period cash flow targets explain: (1) cross-sectional differences in firms' propensity to engage in downward

[24] Since previous research has shown that losses are less informative than profits [Hayn (1995)], we examined whether the management of analysts' expectations and the capital market reaction to expectations management was different for loss firms. We ran all our empirical tests separately only on loss firms. The results were qualitatively the same as reported in Tables 3 thru 6.

CXM, and (2) cross-sectional differences in firms' propensity to walk down cash flow rather than accrual forecasts. Because we find evidence that firms relying on downward CXM are more likely to meet or beat both cash flow and earnings forecasts, our study has implications for researchers and practitioners who are interested in examining the association between expectations management and the likelihood of meeting or beating analysts' forecasts. Finally, our capital market tests show that investors react more favorably in the short window relative to the long window to firms that engage in upward cash flow (or accrual) management and downward cash flow (or accrual) expectations management.

Our study is subject to limitations that can be addressed in future research as follows: First, because managerial guidance of analysts' cash flow and earnings forecasts cannot be directly observed, our two proxies of downward CXM and EXM based on two models [Brown and Pinello (2007) and Matsumoto (2002)] cannot distinguish between public and private expectations management. Future research can consider hand-collected data of public and private guidance to address this issue. Second, because analysts do not explicitly provide accrual forecasts, we cannot measure downward AXM directly. Thus, our proxies of AXM as the difference between EXM and CXM are subject to a measurement error. Third, we use analysts' forecast revisions (i.e., first minus last consensus forecast) as a primary measure of CXM and EXM. Nonetheless, analysts' downward revisions do not necessarily suggest that analysts make revisions following management guidance. Finally, Christensen et al. (2011) show managers use earnings guidance to influence analysts' forecast exclusions. We do not address street earnings exclusions in this study. Future research can examine whether managers use downward cash flow (accrual) guidance to influence analysts to exclude earnings components differently.

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Figure 1: Downward earnings expectations management via operating cash flows and accruals

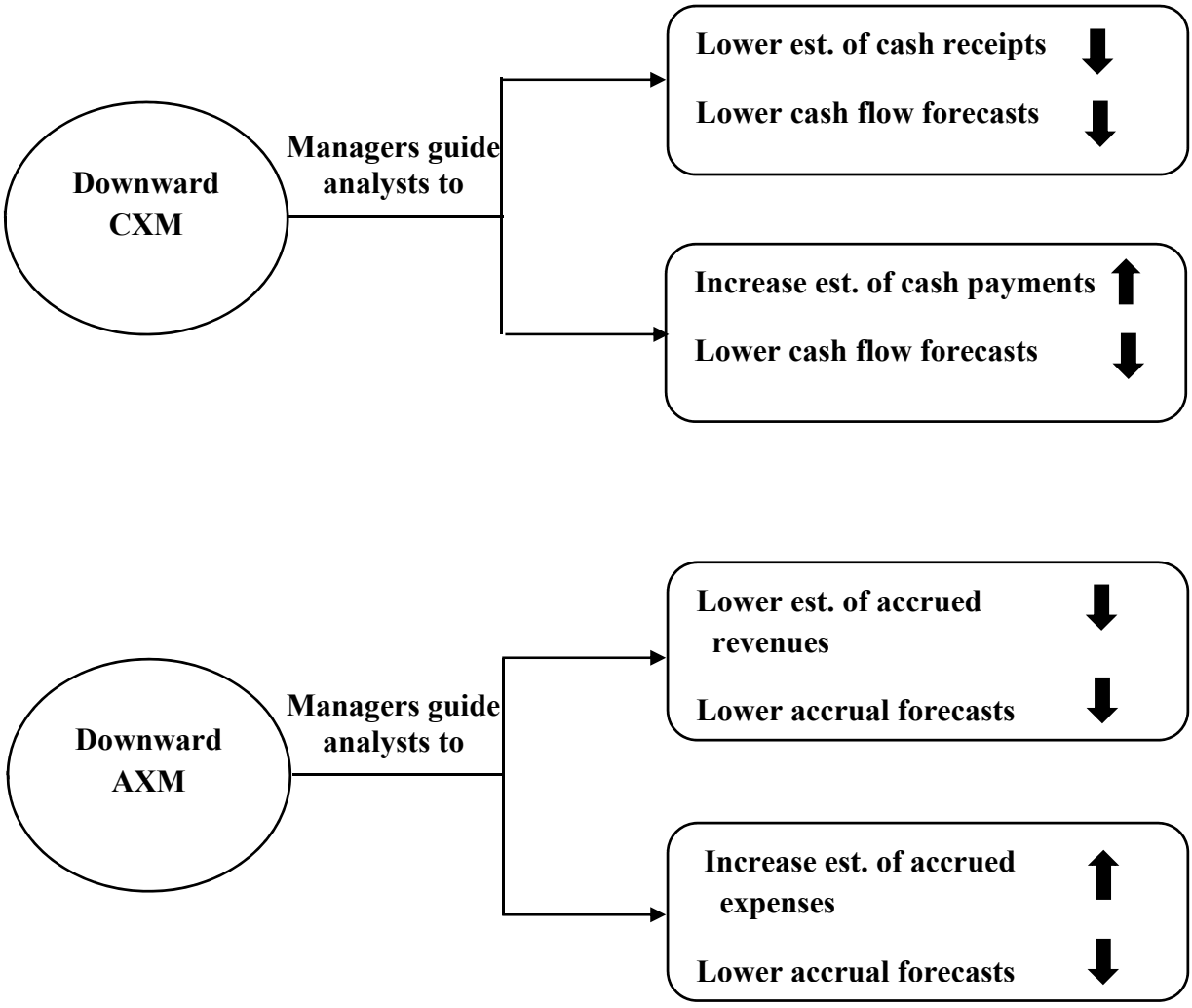
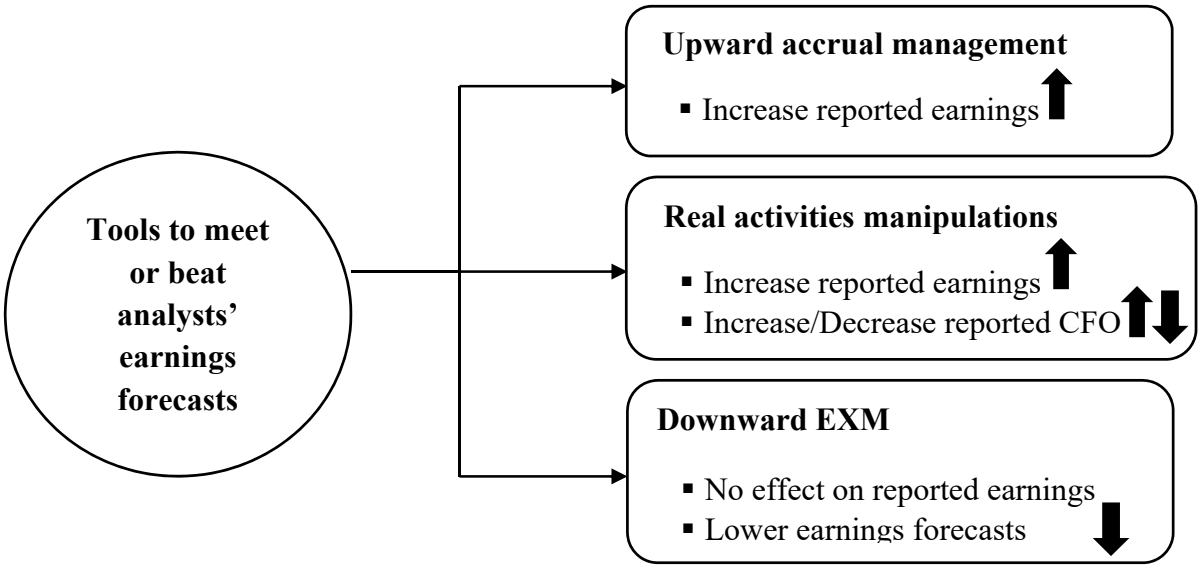
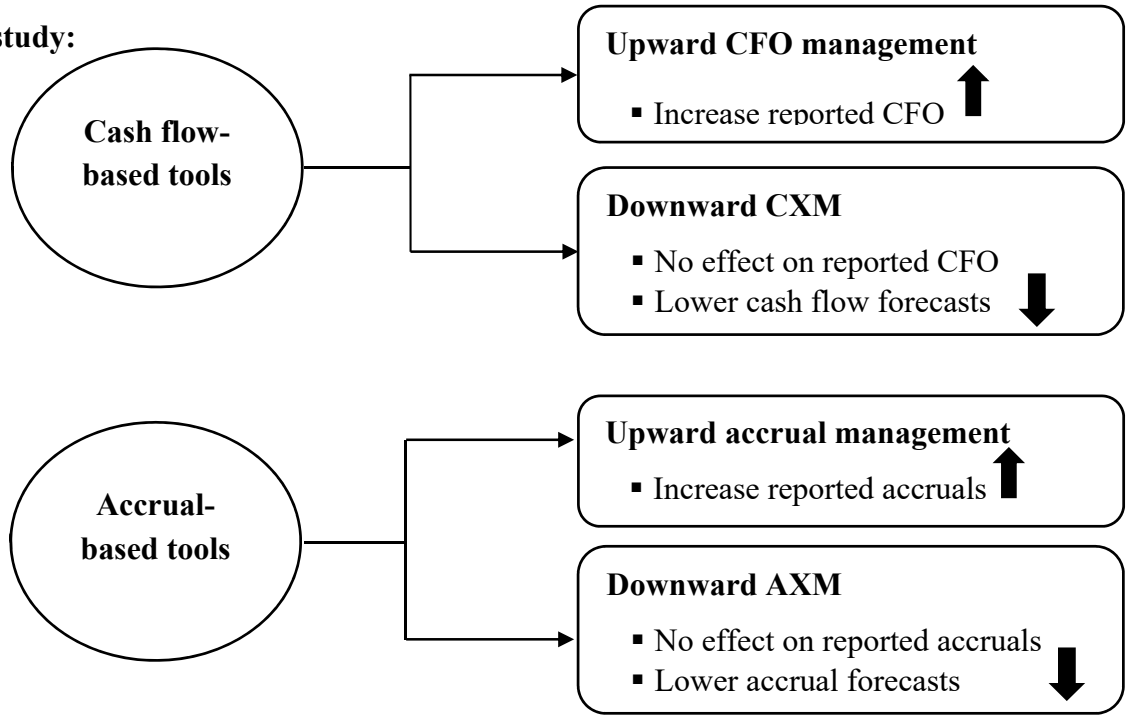


Figure 2: Cash flow versus accrual management strategies

Summary of prior literature[25]:



Our study:



[25] Real earnings management is related to but different from cash flow management because the former strategy is used to inflate reported earnings but could either increase or decrease reported CFO whereas the latter strategy is used to inflate reported CFO directly.

Appendix A: Variable definitions

Variables	Definitions
ABACC	Abnormal accrual is the difference between the reported accrual in COMPUSTAT and the normal level of accrual as estimated by the forward-looking modified Jones Model (Dechow et al. 2003). $ABACC^{O}$ is an orthogonalized ABACC.
ABCFO	Abnormal operating cash flow is the difference between the actual operating cash flows reported in COMPUSTAT and the normal (expected) level of operating cash flows (as estimated using the Dechow et al. 1998 model). $ABCFO^{O}$ is an orthogonalized ABCFO.
ABAFE	Absolute value of the initial accrual forecast error (actual accrual per share minus first accrual forecast), deflated by price at the end of the prior year. $ABAFE^{O}$ is an orthogonalized ABAFE.
ABCFE	Absolute value of the initial cash flow forecast error (actual reported cash flow per share minus first cash flow forecast), deflated by price at the end of the prior year. $ABCFE^{O}$ is an orthogonalized ABCFE.
ABSFE	Absolute value of the initial earnings forecast error (actual reported EPS minus first EPS forecast), deflated by price at the end of the prior year
ACCGR	Accrual growth is defined as the ratio of change in accruals (current year's accruals minus lagged accruals) to prior year's accruals. $ACCGR^{O}$ is an orthogonalized ACCGR.
AFE	Accrual forecast error is calculate as the difference between FE and CFE. AFE^{O} is an orthogonalized AFE.
ATA	Average total assets
AXM	Accrual expectations management is defined as the difference between EXM and CXM (continuous variable). AXM^{O} is an orthogonalized AXM.
BHAR	Daily buy-and-hold cumulative abnormal return computed from two trading days after the first annual consensus forecast to two trading days after the earnings announcement date.
BLOAT	Bloat is defined as net operating assets scaled by sales
CAPINT	Capital Intensity is defined as gross property, plant and equipment scaled by sales
CAR	Daily cumulative abnormal return computed over the three days around the earnings announcement date.

Variables	Definitions
CFE	Cash flow forecast error is defined as actual CPS minus the last annual consensus forecast of CPS scaled by stock price at the end of the prior year. CFE^{O} is an orthogonalized CFE.
CPS	Cash flow per share
CFOGR	Cash flow growth is defined as the ratio of change in operating cash flows (current year's CFO minus lagged CFO) to prior year's operating cash flows. $CFOGR^{O}$ is an orthogonalized CFOGR.
CXM	Cash flow expectations management is defined as the difference between the initial cash flow forecast and the latest cash flow forecast scaled by average total assets, and multiply by 100 (continuous variable). CXM^{O} is an orthogonalized CXM.
CXM_OA	CXM Over AXM is an indicator variable equal to one if CXM > AXM (i.e., the magnitude of cash flow expectations management is greater than that of accrual expectation management), and zero otherwise
EARN	Earnings is calculated as income before extraordinary items scaled by total assets
EPS	Earnings per share
EXM	Earnings expectations management is defined as the difference between the initial earnings forecast and the latest earnings forecast scaled by average total assets, and multiply by 100 (continuous variable)
FE	Earnings forecast error is defined as actual EPS minus the last annual consensus forecast of EPS scaled by stock price at the end of the prior year.
FOLLOW	The ratio of number of analysts providing cash flow forecasts to number of analysts providing earnings forecasts for each firm-year
FOLLOWEPS	Number of analysts providing earnings forecasts for each firm-year
INDPRO	Average annual growth in industrial production calculated over the 12 months ending at year t
INST	Institutional ownership is calculated as the percentage of shares that are held by institutional investors

Variables	Definitions
LIT	An indicator variable equal to one for firms that belong to high litigation risk industries as defined by Matsumoto (2002), and zero otherwise. High litigation risk industries include 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370-7374 (four-digit SIC codes).
MBA	An indicator variable equal to one for firm-year observations with a nonnegative accrual surprise (actual accrual per share minus last consensus accrual forecast), and zero otherwise
MBA*AXM	An interaction term between MBA and AXM^{O} variables
MBA*ABACC	An interaction term between MBA and $ABACC^{O}$ variables
MBBOTH	An indicator variable equal to one if firms meet or beat both analysts' cash flow and earnings forecasts, and zero otherwise (MBC = 1 and MBE = 1)
MBC	An indicator variable equal to one for firm-year observations with a nonnegative cash flow surprise (actual reported CPS minus last consensus cash flow forecast), and zero otherwise
MBC*CXM	An interaction term between MBC and CXM^{O} variables
MBC*ABCFO	An interaction term between MBC and $ABCFO^{O}$ variables
MBE	An indicator variable equal to one for firm-year observations with a nonnegative earnings surprise (actual reported EPS minus last consensus earnings forecast), and zero otherwise
MB	Market-to-book ratio is market cap divided by book value of equity
PMBA	Prior year MBA
PMBC	Prior year MBC
POSTSOX	Post-SOX period is an indicator variable equal to one if fiscal year is greater than 2002, and zero otherwise
POSUE	An indicator variable equal to one if firms have a positive seasonal change in earnings, and zero otherwise
RD	Research and development expense scaled by average total assets
SIZE	Logarithm of market cap for each firm in the current year
SHARES	Average number of shares outstanding
ZSCORE	Altman's Z Score = 1.2(Net working capital)/ Total assets + 1.4(RE)/ Total assets + 3.3(EBIT)/ Total assets + 0.6(Market value of equity)/ Book value of liabilities + 1.0(Sale)/ Total assets

Appendix B1: EXM Decomposition Test
Logistic regression analysis of MBC, MBA on cash flow and accrual-based tools

Variable	Eq. (a) DV = Prob (MBC = 1)$_t$				Eq. (b) DV = Prob (MBA = 1)$_t$			
	Predicted sign	**Coeff.**	**Z-stat**	**Marginal effect**	**Predicted sign**	**Coeff.**	**Z-stat**	**Marginal effect**
INTERCEPT	?	.493**	2.47		?	-.412	-1.17	
ABCFO^O	**+**	**.173***	**1.91**	**.04**				
CXM^O	**+**	**.181*****	**5.37**	**.04**				
ABACC^O					**+**	**.269*****	**4.66**	**.06**
AXM^O					**+**	**.223*****	**5.55**	**.05**
POSUE	+	-.028	-.53	-.01	+	.127*	1.94	.03
INDPRO	+	.174	1.53	.04	+	-.172	-1.37	-.04
SIZE	+	-.010	-.45	-.00	+	.023	.89	.01
ABSFE	-	-.332	-.45	-.08	-	-.830***	-2.63	-.20
BLOAT	+	.049***	2.76	.01	-	-.038	-1.60	-.01
MB	-	-.007	-.95	-.00	-	.007	.80	.00
FOLLOWEPS	+	.001	.39	.00	+	-.000	-.07	-.00
ZSCORE	+	-.009	-1.04	-.00	+	-.009	-1.56	-.00
CAPINT	+	-.035	-1.35	-.01	+	.020	.83	.00
SHARES	-	.00	.04	.00	-	-.000	-.68	-.00
	2 Log Likelihood			-4693.795	2 Log Likelihood			-4941.758
	Chi-Square			194.996	Chi-Square			281.523
	P-value			.000	P-value			.000
	Pseudo R^2			.04	Pseudo R^2			.05
	Correctly classified			58.35%	Correctly classified			59.51%
	N			7,386	N			7,386
	N (MBC = 1)			4,136	N (MBA = 1)			3,349
	N (MBC = 0)			3,250	N (MBA = 0)			4,037

Notes to Appendix B1:

This table presents logistic regression results of Equations (a) and (b).

$$Prob\ (MBC = 1)_t = \rho_0 + \rho_1 ABCFO^O_t + \rho_2 CXM^O_t + \rho_3 POSUE_t + \rho_4 INDPRO_t + \rho_5 SIZE_t + \rho_6 ABSFE_t + \rho_7 BLOAT_{t-1} + \rho_8 MB_t + \rho_9 FOLLOWEPS_t + \rho_{10} ZSCORE_{t-1} + \rho_{11} CAPINT_t + \rho_{12} SHARES_t + \varepsilon_t \quad \text{Eq.(a)}$$

$$Prob\ (MBA = 1)_t = \eta_0 + \eta_1 ABACC^O_t + \eta_2 AXM^O_t + \eta_3 POSUE_t + \eta_4 INDPRO_t + \eta_5 SIZE_t + \eta_6 ABSFE_t + \eta_7 BLOAT_{t-1} + \eta_8 MB_t + \eta_9 FOLLOWEPS_t + \eta_{10} ZSCORE_{t-1} + \eta_{11} CAPINT_t + \eta_{12} SHARES_t + \varepsilon_t \quad \text{Eq.(b)}$$

Fixed industry effects are included and standard errors are clustered by firm and year in all models. *, **, ***: significant at 10%, 5%, 1% two-sided p-values. P-values are based on Huber-White robust standard errors.

All continuous variables are winsorized at the top and bottom 1st and 99th percentile. All variables are defined in the Appendix A. Marginal effect represents the overall average change in probability of meeting or beating analysts' cash flow or accrual forecasts when the continuous X variables increase by one unit or when moving from zero to one value for the dummy X variables.

Appendix B2: Decomposition Test
Logistic regression analysis of MBBOTH on cash flow and accrual-based tools

Variable	Predicted sign	DV = MBBOTH					
		Eq.(c)			Eq.(d)		
		Coeff.	Z-stat	Marginal effect	Coeff.	Z-stat	Marginal effect
INTERCEPT	?	-.513***	-2.72		-4.872**	-2.26	
EXM	?	**.041***	**1.71**	**.01**			
ABCFO^O	**?**	**.140****	**2.24**	**.03**	**.149****	**2.36**	**.03**
CXM^O	**?**				**.099*****	**3.01**	**.02**
ABACC^O	?	**-.094*****	**-3.76**	**-.02**	**-.105*****	**-3.92**	**-.02**
AXM^O	?				**-.104*****	**-2.68**	**-.02**
POSUE	+	.160**	2.17	.04	.141*	1.92	.03
INDPRO	+	.177*	1.84	.04	.177*	1.79	.04
SIZE	+	.014	.71	.00	.012	.63	.00
ABSFE	-	-1.763	-1.52	-.41	-1.621	-1.38	-.37
BLOAT	-	.000	.01	.00	.004	.11	.00
MB	+	-.012	-1.50	-.00	-.012	-1.58	-.00
FOLLOWEPS	+	.004	1.48	.00	.004	1.44	.00
ZSCORE	-	.001	.09	.00	.000	.07	.00
CAPINT	+	-.047*	-1.72	-.01	-.051*	-1.94	-.01
SHARES	+	-.000	-.42	-.00	-.000	-.39	-.00
2 Log Likelihood				-4821.566			-4806.132
Chi-Square				232.655			263.523
P-value				.000			.000
Pseudo R^2				.04			.05
Correctly classified				61.44%			62.05%
N				7,386			7,386
N (MBBOTH = 1)				2,885			2,885
N (MBBOTH = 0)				4,501			4,501

Notes to Appendix B2:
This table presents logistic regression results of Equations (c)-(d).

$$Prob\ (MBBOTH = 1)_t = \sigma_0 + \sigma_1 EXM_t + \sigma_2 ACFO^O_t + \sigma_3 ABACC^O_t + \sigma_4 POSUE_t + \sigma_5 INDPRO_t + \sigma_6 SIZE_t + \sigma_7 ABSFE_t + \sigma_8 BLOAT_{t-1} + \sigma_9 MB_t + \sigma_{10} FOLLOWEPS_t + \sigma_{11} ZSCORE_{t-1} + \sigma_{12} CAPINT_t + \sigma_{13} SHARES_t + \varepsilon_t \quad \text{Eq.(c)}$$

$$Prob\ (MBBOTH = 1)_t = \chi_0 + \chi_1 ABCFO^O_t + \chi_2 CXM^O_t + \chi_3 ABACC^O_t + \chi_4 AXM^O_t + \chi_5 POSUE_t + \chi_6 INDPRO_t + \chi_7 SIZE_t + \chi_8 ABSFE_t + \chi_9 BLOAT_{t-1} + \chi_{10} MB_t + \chi_{11} FOLLOWEPS_t + \chi_{12} ZSCORE_{t-1} + \chi_{13} CAPINT_t + \chi_{14} SHARES_t + \varepsilon_t \quad \text{Eq.(d)}$$

Fixed industry effects are included and standard errors are clustered by firm and year in all models. *, **, ***: significant at 10%, 5%, 1% two-sided p-values. P-values are based on Huber-White robust standard errors. All continuous variables are winsorized at the top and bottom 1st and 99th percentile. All variables are defined in the Appendix A. Marginal effect represents the overall average change in probability of meeting or beating analysts' cash flow and earnings forecasts when the continuous X variables increase by one unit or when moving from zero to one value for the dummy X variables.

TABLE 1 Sample selection

Panel A: Sample selection of earnings (EPS) and cash flow (CPS) forecast data	**EPS**	**CPS**
Firm-year observations with first consensus earnings (cash flow) forecasts issued at least one trading day after the prior year's earnings announcement date and last consensus earnings (cash flow) forecasts issued at least three trading days before the current year's earnings announcement date	66,951	11,728
Less: Firm-year observations with less than 20 trading days between the first and the last forecast dates	(478)	(148)
Less: Firm-year observations in the utilities and financial services industries (i.e., SIC codes 49 and 60-67)	(18,270)	(2,083)
Firm-year observations with both first and last consensus earnings (cash flow) forecasts between 1995 and 2010	**48,203**	**9,497**

Panel B: Sample selection for data analyses	
Firm-year observations with both earnings and cash flow forecast data	8,978
Less: Firm-year observations with missing variables from COMPUSTAT and I/B/E/S	(4,625)
Final firm-year observations for testing hypotheses	**4,353**

Notes to Table 1:
See Appendix A for variable definitions. All continuous variables are winsorized at the top and bottom 1%. The sample consists of firm-year observations during the period 1995-2010.

TABLE 2 Descriptive statistics

Variables	n	Mean	Std. Dev.	Q1	Median	Q3
CXM	4,353	0.009	0.096	-0.011	0.000	0.018
AXM	4,353	0.001	0.076	-0.011	-0.000	0.010
CXM_OA	4,353	0.509	0.500	0	1	1
$ABCFO^{O}$	4,353	0.000	1.000	-0.595	-0.056	0.561
$ABACC^{O}$	4,353	0.000	1.000	-3.758	0.070	0.526
ZSCORE	4,353	4.409	4.310	2.048	3.298	5.351
INST	4,353	0.681	0.302	0.566	0.775	0.905
MKSHARE	4,353	0.025	0.046	0.001	0.005	0.025
BLOAT	4,353	1.197	1.289	0.443	0.778	1.449
POSTSOX	4,353	0.939	0.239	1	1	1
LIT	4,353	0.300	0.458	0	0	1
RD	4,353	0.032	0.056	0	0	0.039
$ABCFE^{O}$	4,353	0.000	1.000	-0.483	-0.316	0.031
$ABAFE^{O}$	4,353	0.000	1.000	-0.224	-0.046	0.131
$CFOGR^{O}$	4,353	0.000	1.000	-0.276	-0.058	0.192
$ACCGR^{O}$	4,353	0.000	1.000	-0.190	-0.035	0.134
PMBC	4,353	0.562	0.496	0	1	1
PMBA	4,353	0.447	0.497	0	0	1
FOLLOW	4,353	0.311	0.274	0.115	0.200	0.421
EARN	4,353	0.046	0.105	0.019	0.058	0.098
SIZE	4,353	8.172	1.700	7.046	8.163	9.340
MB	4,353	3.087	3.218	1.545	2.446	3.915

Notes to Table 2:
See Appendix A for variable definitions. All continuous variables are winsorized at the top and bottom 1%. The superscript "O" denotes orthogonalized variables.

Table 3: Test of downward cash flow expectation management determinants

Variable	Eq. (1) – OLS Regression DV = CXM_t	
	Coeff.	**T-stat**
INTERCEPT	0.093***	4.47
Main Test Variables		
$CFOGR^O$	-0.004**	-2.57
PMBC	-0.009***	-4.37
$ABCFE^O$	-0.001	-0.31
ZSCORE	0.003***	7.18
INST	-0.009***	-2.75
MKSHARE	0.086**	2.28
BLOAT	-0.004***	-3.30
POSTSOX	-0.014	-1.23
Control Variables		
FOLLOW	-0.004	-0.29
EARN	-0.186***	-4.90
SIZE	-0.007***	-4.03
MB	0.000	0.60
LIT	-0.009	-0.84
RD	-0.113***	-3.55
$ABCFO^O$	-0.001	-0.21
$ABACC^O$	0.002	1.13
AXM	-.776***	-16.51
$ACCGR^O$	-0.001	-1.45
$ABAFE^O$	-0.003	-0.89
	n	4,353
	R-squared	0.45

Notes to Table 3:

This table presents OLS regression results of Equation (1).

$$CXM_t = \alpha_0 + \alpha_1 CFOGR^O_t + \alpha_2 PMBC_t + \alpha_3 ABCFE^O_t + \alpha_4 ZSCORE_{t-1} + \alpha_5 INST_{t-1} + \alpha_6 MKSHARE_{t-1} + \alpha_7 BLOAT_t + \alpha_8 POSTSOX_t + \alpha_9 FOLLOW_t + \alpha_{10} EARN_t + \alpha_{11} SIZE_t + \alpha_{12} MB_t + \alpha_{13} LIT_t + \alpha_{14} RD_{t-1} + \alpha_{15} ABCFO^O_t + \alpha_{16} ABACC^O_t + \alpha_{17} AXM_t + \alpha_{18} ACCGR^O_t + \alpha_{19} ABAFE^O_t + \varepsilon_t \quad \text{Eq.(1)}$$

Fixed industry effects are included and standard errors are clustered by firm and year.

*, **, ***: significant at 10%, 5%, 1% two-sided p-values. P-values are based on Huber-White robust standard errors. All continuous variables are winsorized at the top and bottom 1st and 99th percentile. All variables are defined in the Appendix A.

Table 4: Test of downward accrual expectation management determinants

Variable	Eq. (2) – OLS Regression DV = AXM_t	
	Coeff.	**T-stat**
INTERCEPT	0.063***	3.84
Main Test Variables		
$ACCGR^O$	0.000	0.31
PMBA	0.003*	1.76
$ABAFE^O$	0.000	0.01
ZSCORE	0.002***	5.08
INST	-0.005*	-1.80
MKSHARE	0.061**	2.16
BLOAT	-0.002*	-1.84
POSTSOX	-0.014**	-2.14
Control Variables		
FOLLOW	-0.014	-1.50
EARN	-0.110***	-2.97
SIZE	-0.005**	-2.53
MB	0.000	0.03
LIT	-0.009	-0.97
RD	-0.068*	-1.68
$ABCFO^O$	0.003	1.36
$ABACC^O$	-0.001	-0.67
CXM	-0.517***	-23.61
$ABCFE^O$	-0.000	-0.25
$CFOGR^O$	-0.000	-0.45
	n	4,353
	R-squared	0.42

Notes to Table 4:

This table presents OLS regression results of Equation (2).

$$AXM_t = \beta_0 + \beta_1 ACCGR^O_t + \beta_2 PMBA_t + \beta_3 ABAFE^O_t + \beta_4 ZSCORE_{t-1} + \beta_5 INST_{t-1} + \beta_6 MKSHARE_{t-1} + \beta_7 BLOAT_t + \beta_8 POSTSOX_t + \beta_9 FOLLOW_t + \beta_{10} EARN_t + \beta_{11} SIZE_t + \beta_{12} MB_t + \beta_{13} LIT_t + \beta_{14} RD_{t-1} + \beta_{15} ABCFO^O_t + \beta_{16} ABACC^O_t + \beta_{17} CXM_t + \beta_{18} CFOGR^O_t + \beta_{19} ABCFE^O_t + \varepsilon_t \quad \text{Eq.(2)}$$

Fixed industry effects are included and standard errors are clustered by firm and year.

*, **, ***: significant at 10%, 5%, 1% two-sided p-values. P-values are based on Huber-White robust standard errors. All continuous variables are winsorized at the top and bottom 1st and 99th percentile. All variables are defined in the Appendix A.

Table 5: Test of the determinants of downward CXM over downward AXM

Variable	Eq.(3) Logistic Regression: DV = Prob (CXM_OA = 1)$_t$		
	Coeff.	**Z-stat**	**Marginal effect**
INTERCEPT	0.330	1.17	
Main Test Variables			
$CFOGR^O$	-0.104***	-3.14	-0.03
PMBC	-0.242***	-3.78	-0.06
$ABCFE^O$	-0.074	-1.57	-0.02
ZSCORE	0.021***	3.65	0.01
INST	-0.131*	-1.94	-0.03
MKSHARE	-1.311	-1.61	-0.32
BLOAT	-0.061***	-2.79	-0.01
POSTSOX	-0.117	-0.57	-0.03
$ACCGR^O$	-0.011	-0.58	-0.00
$ABAFE^O$	-0.086*	-1.95	-0.02
Control Variables			
FOLLOW	0.360**	2.16	0.09
EARN	-1.506**	-2.54	-0.36
SIZE	0.008	0.28	0.00
MB	-0.008	-0.78	-0.00
LIT	-0.191*	-1.74	-0.05
RD	0.393	0.54	0.10
$ABCFO^O$	-0.157***	-4.22	-0.04
$ABACC^O$	0.046	0.94	0.01
		n	4,353
		n (CXM_OA = 1)	2,217
		n (CXM_OA= 0)	2,136
		P-value	0.000
		Pseudo R^2	0.04

Notes to Table 5:

This table presents logistic regression results of Equation (3).

$$Prob\ (CXM\_OA = 1)_t = \delta_0 + \delta_1 CFOGR^O_t + \delta_2 PMBC_t + \delta_3 ABCFE^O_t + \delta_4 ZSCORE_{t-1} + \delta_5 INST_{t-1} + \delta_6 MKSHARE_{t-1} + \delta_7 BLOAT_t + \delta_8 POSTSOX_t + \delta_9 ACCGR^O_t + \delta_{10} ABAFE^O_t + \delta_{11} FOLLOW_t + \delta_{12} EARN_t + \delta_{13} SIZE_t + \delta_{14} MB_t + \delta_{15} LIT_t + \delta_{16} RD_{t-1} + \delta_{17} ABCFO^O_t + \delta_{18} ABACC^O_t + \varepsilon_t \quad \text{Eq.(3)}$$

Fixed industry effects are included and standard errors are clustered by firm and year.

*, **, ***: significant at 10%, 5%, 1% two-sided p-values. P-values are based on Huber-White robust standard errors. All continuous variables are winsorized at the top and bottom 1st and 99th percentile. All variables are defined in the Appendix A. Marginal effect represents the overall average change in probability that firms are more likely to engage in downward cash flow than downward accrual expectations management when the continuous X variables increase by one unit or when moving from zero to one value for the dummy X variables.

Table 6: Test of Market Response to Upward Cash Flow and Accrual Management and Downward Cash Flow and Accrual Expectations Management

Variable	OLS Regression: DV = Average Daily Abnormal Return (%)			
	Eq. (4) - Short Window (CAR)		Eq. (5) Long Window (BHAR)	
	Model 1	Model 2	Model 3	Model 4
INTERCEPT	-0.562	-0.510	-23.733	-24.230
CXM^O	-0.119	-0.012	-10.353***	-9.618***
AXM^O	-0.019	-0.053	-9.833***	-12.748***
$ABCFO^O$	0.270***	0.274**	-2.381	-3.246
$ABACC^O$	0.205	0.344	-0.960	0.184
CFE^O	0.158	0.184	2.459**	3.095**
AFE^O	0.174	0.144	1.352	0.912
MBC	1.381***	1.367***	9.424**	9.054**
MBA	1.351***	1.383***	7.646***	8.092***
SIZE	0.001	-0.003	1.144	1.211
MB	-0.017	-0.016	0.549**	0.559**
*MBC*CXM*		-0.211		-1.336
*MBC*ABCFO*		-0.025		1.371
*MBA*AXM*		0.067		6.165***
*MBA*ABACC*		-0.319		-2.596
n	7,527	7,527	7,527	7,527
Adjusted R^2	1.51%	1.58%	4.57%	4.79%

Test of Sum of the Coefficients for Model (2):

CXM^0 (-0.012) + MBC (1.367) + MBC*CXM (-0.211) = 0: F = 19.29 (p-value < 0.01)
$ABCFO^0$ (0.274) + MBC (1.367) + MBC*ABCFO (-0.025) = 0: F = 16.35 (p-value < 0.01)
AXM^0 (-0.053) + MBA (1.383) + MBA*AXM (0.067) = 0: F = 15.72 (p-value < 0.01)
$ABACC^0$ (0.344) + MBA (1.383) + MBA*ABACC (-0.319) = 0: F = 16.76 (p-value < 0.01)

Test of Sum of the Coefficient for Model (4):

CXM^0 (-9.618) + MBC (9.054) + MBC*CXM (-1.336) = 0: F = 0.62 (p-value = 0.431)
$ABCFO^0$ (-3.246) + MBC (9.054) + MBC*ABCFO (1.371) = 0: F = 1.82 (p-value = 0.178)
AXM^0 (-12.748) + MBA (8.092) + MBA*AXM (6.165) = 0: F = 0.46 (p-value = 0.497)
$ABACC^0$ (0.184) + MBA (8.092) + MBA*ABACC (-2.596) = 0: F = 2.51 (p-value = 0.113)

Notes to Table 6:

This table presents OLS regression results of Equation (4) and (5)

$$CAR_t = \mu_0 + \mu_1 CXM^O{}_t + \mu_2 AXM^O{}_t + \mu_3 ABCFO^O{}_t + \mu_4 ABACC^O{}_t + \mu_5 CFE^O{}_t + \mu_6 AFE^O{}_t + \mu_7 MBC_t + \mu_8 MBA_t + \mu_9 SIZE_t + \mu_{10} MB_t + \mu_{11} MBC*CXM_t + \mu_{12} MBC*ABCFO_t + \mu_{13} MBA*AXM_t + \mu_{14} MBA*ABACC_t + \varepsilon_t \quad \text{Eq. (4)}$$

$$BHAR_t = \lambda_0 + \lambda_1 CXM^O{}_t + \lambda_2 AXM^O{}_t + \lambda_3 ABCFO^O{}_t + \lambda_4 ABACC^O{}_t + \lambda_5 CFE^O{}_t + \lambda_6 AFE^O{}_t + \lambda_7 MBC_t + \lambda_8 MBA_t + \lambda_9 SIZE_t + \lambda_{10} MB_t + \lambda_{11} MBC*CXM_t + \lambda_{12} MBC*ABCFO_t + \lambda_{13} MBA*AXM_t + \lambda_{14} MBA*ABACC_t + \varepsilon_t \quad \text{Eq. (5)}$$

Fixed industry effects are included and standard errors are clustered by firm and year.
*, **, ***: significant at 10%, 5%, 1% two-sided p-values. P-values are based on Huber-White robust standard errors. All continuous variables are winsorized at the top and bottom 1st and 99th percentile. All variables are defined in the Appendix A.