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Forecasts in IPO Prospectuses: The Effect of Corporate Governance on Earnings Management

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Abstract: Prior research suggests that managers may use earnings management to meet voluntary earnings forecasts. We document the extent of earnings management undertaken within Canadian Initial Public Offerings (IPOs) and study the extent to which companies with better corporate governance systems are less likely to use earnings management to achieve their earnings forecasts. In addition, we test other factors that differentiate forecasting from non-forecasting firms, and assess the impact of forecasting and corporate governance on future cash flow prediction. We find that firms with better corporate governance are less likely to include a voluntary earnings forecast in their IPO prospectus. In addition, we find that while IPO firms use accruals management to meet forecasts; the informativeness of the discretionary accruals depends on whether or not the firm would have missed its forecast without the use of discretionary accruals.

Keywords: IPO, corporate governance, earnings management, management earnings forecasts

1. INTRODUCTION

In Canada, IPO firms have the option of including an earnings forecast in their prospectuses, which provides a unique environment for assessing earnings management. Non-IPO research indicates that managers may manage earnings to achieve their earnings forecasts, particularly where expected earnings have been overestimated. Prior research has also provided some evidence regarding the propensity for

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IPO firms to manage earnings to achieve management earnings forecasts. However, there is little evidence regarding the impact of corporate governance on the IPO forecast decision, and on the subsequent behaviour of managers as they strive to meet the earnings targets they have established. We focus on the influence of corporate governance factors on the voluntary forecast decision, earnings management undertaken during the year of the public offering, and the predictive value of discretionary accruals.

Specifically, we address the following research questions: (a) do corporate governance factors help differentiate forecasting IPO firms from non-forecasting firms; (b) do IPO firms manage earnings in the year of going public, and if so (i) is earnings management by IPO firms affected by the extent to which actual earnings deviate from the amount forecast, and (ii) is earnings management lower for IPO firms with stronger corporate governance environments; we also assess (c) whether the predictive value of discretionary accruals is higher for forecasters with better corporate governance. As regulators move to strengthen corporate governance mechanisms in many jurisdictions, it is important to assess whether better governance has an impact on earnings management behaviour (Dey, 1994; and Man and Wong, 2013). Stronger corporate governance is expected to constrain the extent of earnings management by IPO firms and mediate the relationship of discretionary accruals and subsequent cash flows. The IPO environment is ideal for assessing the impact of corporate governance on earnings management since, for example, forecasting firms have a strong incentive to avoid the significant adverse effect on share price for missing their forecast earnings (relative to other forecasters and non-forecasters) (Jog and McConomy, 2003). Most of the issues we study have not been addressed in the IPO literature. Regulators and investors are likely to be interested in the evidence we provide regarding corporate governance in the IPO context.

Prior research in a non-IPO setting suggests that firms with better corporate governance are more likely to issue management earnings forecasts (e.g., Karamanou and Vafeas, 2005; and Ajinka et al., 2005). However prior research does not examine whether IPO firms with better corporate governance are more, or less, likely to forecast. It is important to better understand the relationship between forecasting and corporate governance as stronger corporate governance may constrain IPO-related earnings management, and may impact investors' interpretation of the persistence of discretionary accruals. Due to lower underpricing and higher valuation, IPO managers are expected to prefer to forecast. However, better governance may reduce the probability of a forecast being issued, since independent directors may prefer to reduce the risk of personal litigation and reputation costs. Our results show that firms with better governance are less likely to forecast, after controlling for other factors known to influence the decision to include an earnings forecast in the prospectus.

While extant research documents the existence of accruals management prior to and following the IPO, little is known regarding constraints to IPO earnings management. We examine whether IPO firms' ability to use discretionary accruals to meet their earnings forecasts decreases as the quality of corporate governance increases. Consistent with prior IPO-related earnings management research, we use the cross-sectional adaptation of the Jones (1991) model to calculate normal accruals, and the performance-matching procedure suggested by Kothari et al. (2005) to

calculate performance-matched discretionary accruals. After controlling for selection bias, our results suggest that consistent with prior research, firms use discretionary accruals in an effort to achieve their earnings forecasts. Also, consistent with prior research, we find that better corporate governance moderates the use of discretionary accruals by IPOs.

We then examine whether discretionary accruals are used to avoid the negative consequences of missing the forecast, or to communicate private information about future profitability. We find that discretionary accruals of forecasters that would have achieved their forecast before taking discretionary accruals into account are positively associated with future cash flows. Such firms are better able to use discretionary accruals to communicate private information about future profitability, and this relationship is stronger for firms with better governance.

Our study contributes to the accounting literature in three main ways. First, we provide evidence on factors affecting firms' voluntary provision of earnings forecasts. We show that, in contrast to non-IPO settings where better governance increases the likelihood of issuing an earnings forecast, IPO firms with better governance are less likely to forecast. Second, we contribute to the IPO and earnings management literatures by assessing the impact of corporate governance on the use of accruals management by IPO firms as they try to meet earnings forecasts in prospectuses. Third, we contribute to the IPO and earnings management literature by providing evidence that the discretionary accruals of forecasters communicate private information about future profitability, and better corporate governance enhances the predictive value of discretionary accruals. To the best of our knowledge, the second item has not been examined in the North American context, and the first and third items have not been previously addressed in the literature.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature and presents the research hypotheses. Section 3 discusses the methodology. Section 4 presents the results. Finally, section 5 concludes and discusses the implications of the study.

2. LITERATURE REVIEW, PREDICTIONS BASED ON PRIOR RESEARCH AND HYPOTHESES

(i) The Management Earnings Forecast Decision

Prior research has investigated the factors that influence firms' provision of management earnings forecasts. A summary of management's motivations for providing earnings forecasts, and the characteristics of forecasters vs. non-forecasters, is offered by Hirst et al. (2008).

Managers are motivated to provide earnings forecasts to reduce information asymmetry (Verrecchia, 2001). Private firms considering an IPO are particularly susceptible to information asymmetry problems because owner-managers know the likelihood of successful post-IPO results much better than potential investors (Leland and Pyle, 1977). However, the legal and regulatory environment will influence the decision to issue a management earnings forecast (Hirst et al., 2008, p. 321). Firms in Canada are more likely to issue a forecast than firms in more litigious environments such as the

US, but regulatory penalties for misrepresentation via a forecast in Canada still imply that many IPO firms remain reluctant to issue forecasts (Li and McConomy, 2004). Firms are also more likely to forecast during periods of rising earnings (Miller, 2002), and when the forecast helps IPO firms share "good news" in the sense of improved earnings expectations (Clarkson et al., 1992). It would be costly for firms with poor earnings prospects to mimic firms with better prospects, due to the impact on the firm's credibility and the increased probability of litigation.

Other factors that have been shown to be associated with the decision to provide an earnings forecast include: earnings history, the length of time covered by the forecast, and compensation arrangements. For example, while firms with more extensive earnings history may find it easier and less costly to provide a forecast, firms with less earnings history may benefit more from providing a forecast as they have higher information asymmetry (Mak, 1996). Recent research suggests that the benefit to firms forecasting over shorter forecast horizons may also be more significant, as such forecasts could be perceived as being more credible to market participants (Hartnett, 2010). Finally, managers with more equity-based compensation have been found to issue forecasts more frequently, to avoid equity mispricing that could negatively influence their wealth (Nagar et al., 2003; and Hirst et al., 2008).

Prior research also suggests that forecasts can be used as a signal to convey managers' private information, with substitute signals being available. Hughes (1986) provides a bivariate signaling model whereby two signals (retained ownership and a direct disclosure about future cash flows) are needed to convey managers' private information. Consistent with Hughes' intuition, Li and McConomy (2004) find evidence that the retained ownership and forecast signals act as substitutes, with forecasting firms being less likely to signal via retained ownership (and vice versa). Titman and Trueman (1986) suggest that the choice of investment banker and auditor can be used to signal IPO firm value. Therefore, similar to retained ownership, these signals could act as substitutes for forecast signals (or alternatively they could act as complements reinforcing the strength of the forecast signal).

The quality of a firm's corporate governance environment could also affect the propensity to make an earnings forecast. In a non-IPO setting, Karamanou and Vafeas (2005) find that firms with more effective boards of directors and audit committees are more likely to forecast. Similarly, Ajinka et al. (2005) show that the percentage of independent directors on the board is positively related to forecast propensity. Karamanou and Vafeas (2005) also find that corporate governance factors are associated with higher quality forecasts. In contrast, Bédard et al. (2008) do not find evidence that the presence of an audit committee, its independence or its expertise influence the precision of management earnings forecasts included in Quebec IPO prospectuses. Overall, for IPOs, it is unclear whether firms with better corporate governance would be more or less likely to forecast. The benefits of forecasting, in terms of lower underpricing (Jog and McConomy, 2003) and higher valuation (Clarkson et al., 1992), are such that in an IPO setting, managers are expected to prefer to forecast. However, Ajinka et al. (2005) suggest that outside directors can "mitigate managerial self-interest and influence the issuance and properties of earnings forecasts" (p. 348). Therefore, in an IPO setting, better governance may reduce the probability of a forecast being issued. Specifically, independent directors may prefer that managers not forecast to reduce the risk of personal litigation and reputation costs (Ajinka et al., 2005). Hence,

we test the following corporate governance related hypothesis (stated in alternative form):

H1: The probability of forecasting is related to the quality of IPO firms' corporate governance.

(ii) Constraints on Accruals Management to Meet Forecast

The use of discretionary accruals to meet various earnings targets such as positive earnings, earnings increases and analysts' forecasts has been documented extensively (e.g., Matsumoto, 2002; and Philips et al., 2003). Two groups of studies investigate the use of discretionary accruals in the context of IPOs.

The first group examines accruals management in anticipation of going public. There is generally little to no information available to the market about IPO firms other than that contained in their prospectuses. Reported earnings are therefore a significant factor in determining the issue price of the initial offering (Ritter, 1984). Because issuers directly benefit from a higher offering price, this provides them with an incentive to manage earnings prior to the IPO to maximize their wealth. Consistent with this prediction, Friedlan (1994), and DuCharme et al. (2001) show that IPO firms manage their earnings prior to the IPO. In addition, DuCharme et al. (2001) show that initial firm value is positively related to cash flow from operations, normal accruals and discretionary accruals, and that discretionary accruals are as highly valued as normal accruals (and more valued than cash flow from operations). They also find that post-issue returns are negatively related to pre-IPO discretionary accruals. Chou et al. (2009) find similar results for convertible bond offers. Overall, this suggests that accruals management in anticipation of going public increases IPO proceeds and decreases subsequent returns to investors, thereby shifting wealth to the issuers.[1] However, empirical results also question the existence of accruals' management prior to IPOs. For example, Aharony et al. (1993) do not find evidence of earnings management during the period before the IPO. Prior research also questions the methodology used to estimate discretionary accruals around IPOs issuances (Ball and Shivakumar, 2008; Armstrong et al., 2009; and Cecchini et al., 2012). For example, Ball and Shivakumar (2008) suggest that using lagged total assets to scale accrual variables may inflate the subsequent accrual measures. Therefore we use average total assets when scaling in our testing (see Armstrong et al., 2009).

A second group of studies examines accruals management during, or immediately following, the IPO year. The voluntary inclusion of earnings forecasts by IPO firms can create an additional incentive to manage earnings for the IPO year so that reported earnings do not fall short of the forecast. Prior research finds support for the prediction that managers who voluntarily release earnings forecasts use discretionary accruals in the IPO year (Gramlich and Sorensen, 2004); and in the year following the IPO (Magnan and Cormier, 1997; and Cormier and Martinez, 2006).

While extant research documents the existence of accruals management prior to and following the IPO, less is known regarding constraints to IPO earnings

1 Similarly, Teoh et al. (1998b) and Teoh et al. (1998a), respectively, find that discretionary accruals for the IPO year are negatively related with post-issue earnings performance and post-issue stock returns.

management. Morsfield and Tan (2006) find that discretionary accruals in the IPO year are lower for IPOs backed by venture capitalists.[2] In addition, Chahine and Georgen (2011) show that venture capitalist board representation increases underpricing and the IPO premium and Boulton et al. (2010) find lower underpricing in countries with higher earnings quality. Cormier and Martinez (2006) examine the role played by an external board of directors in reducing accruals management to meet voluntary earnings forecast by French IPO firms. They do not find any evidence that having a majority of independent directors on the board reduces the extent of accruals management to meet forecasts. Espenlaub et al. (2012) show that nominated advisor reputation has a significant positive impact on IPO survival on the UK Alternative Investment Market. Finally, Katz (2009) finds that private equity sponsorship results in higher earnings quality, less earnings management and more conservatism prior to and following the IPO.

As the starting point to our investigation of accruals management by Canadian IPO firms, consistent with existing evidence, we expect IPO firms to use discretionary accruals to meet their voluntary earnings forecasts. Since this result is well established in the literature we do not include it as a formal hypothesis, but rather we test the prediction that IPO firms use discretionary accruals to meet their earnings forecast to determine whether the results for our sample are consistent with prior research.

Governance agents are expected to play a monitoring role regarding management so that earnings would better reflect the economic reality of the firm. Several papers support this prediction and present evidence that better corporate governance reduces accruals management in non-IPO contexts (Klein, 2002; Xie et al., 2003; and Bédard et al., 2004). For example, a higher percentage of independent directors reduces the likelihood of belonging to a high discretionary accruals group (Bédard et al., 2004); and the level of discretionary accruals (Klein, 2002; and Xie et al., 2003). Corporate governance was found to have a moderating effect on earnings management in prior IPO research (Cormier and Martinez, 2006). Hence we test the prediction that IPO firms' ability to use discretionary accruals to meet their earnings forecasts decreases as the quality of corporate governance increases, to determine whether the results from prior research are consistent with the results for our sample.

(iii) Predictive Value of Discretionary Accruals

Accrual accounting is preferred over cash accounting because it improves the timing and matching of earnings (Dechow, 1994). However, the discretion afforded by GAAP raises the question of whether managers will use accruals opportunistically to manage earnings in accordance with their reporting incentives, or to communicate private information about the future profitability of the firm. Prior research on discretionary accruals in non-IPO settings provides some support for each of the alternatives.

2 The impact of Venture Capitalists is not a significant concern for studies of IPOs on the Toronto Stock Exchange (TSX), as "VC backed IPOS are rare events" (Carpentier et al., 2010, p. 406). The TSX Venture Exchange (TSXV) "is a substitute for, or a competitor to, the conventional VC market" (Carpentier et al., 2010). It provides capital for early stage companies, with the goal that eventually they can move up to the TSX. However, since the TSXV is also a public market, the firms trading on it are public companies and are excluded from our sample (the TSXV firms are typically much smaller companies where "the TSXV strategy entails attracting new listings of companies that cannot list on regular markets and promoting the migration of the most successful of these firms to the main market" (Carpentier et al., 2010, p. 407)).

Discretionary accruals have been shown to be an opportunistic distortion of earnings and value irrelevant but priced (unpriced) by an inefficient (efficient) market (Balsam et al., 2002). They have also been shown to improve the ability of earnings to reflect economic value (Dechow, 1994; Sloan, 1996; and Subramanyam, 1996). For example, Sankar and Subramanyam (2001) develop a model that examines the "informational advantage from allowing reporting discretion to a manager who has relevant private information when the discretion is subject to GAAP rules" (p. 366). They show that allowing reporting discretion allows managers to use discretion to communicate private information, and increase the information content of reported earnings. They also conclude that institutional mechanisms restricting reporting discretion are necessary to avoid infinite income-increasing accruals.

We first examine whether discretionary accruals communicate private information about future profitability. We then assess whether the predictive value is affected by whether the IPO firm is a forecaster or non-forecaster (forecasters may be motivated to use discretionary accruals to avoid the negative consequences of missing the forecast, but this could affect the predictive value of these discretionary accruals). Our second research hypothesis is stated in the alternative form, as prior research does not allow us to make a directional prediction.

H2: Discretionary accruals are associated with subsequent operating cash flows (and the association is affected by whether a forecaster or non-forecaster makes the discretionary accruals).

Next, we examine whether the quality of corporate governance influences the predictive value of discretionary accruals. While Sankar and Subramanyam (2001) conclude that reporting discretion can increase the information content of reported earnings, they limit their analysis to the restrictions imposed by GAAP rules. Improved corporate governance may also limit a firm's ability to use discretionary accruals, and affect the predictive value of the discretionary accruals. In our testing, we assess the impact of corporate governance on the predictive ability of discretionary accruals for forecasters and non-forecasters. However, the motivation for earnings management differs for forecasters versus non-forecasters. For forecasters, the choice of income increasing or decreasing discretionary accruals would depend on whether the forecast has been "achieved" or "missed". We focus on the impact of corporate governance on the predictive ability of discretionary accruals for forecasters in our third research hypothesis. It is also stated in the alternative form.

H3: The predictive value of discretionary accruals of forecasters is influenced by the quality of corporate governance.

3. METHOD

(i) Sample

The sample consists of Toronto Stock Exchange (TSX) IPOs that satisfy the following criteria:

1. The firm applied for initial listing on the TSX between January 1992 and June 2005 (based on listings from the Toronto Stock Exchange Review (1992–2005)).
2. The firm issued equity shares that were not previously publicly traded (i.e., IPOs) and whose fiscal year end was prior to or on June 30, 2005.
3. Limited life investment funds, limited partnerships, mining firms, income trusts and firms issuing only preferred shares are excluded.[3]
4. IPOs that issued units (e.g., common shares plus warrants) are excluded, as the individual components of units are generally not separately priced in IPOs.

A total of 301 firms met these criteria. Data requirements and limitations yield different sample sizes for each analysis. Table 1 provides a summary of the sample firms by year and by industry. Approximately 38% of the IPOs are in manufacturing, with five other industries representing approximately 9–15% each.

(ii) Models

(a) The Management Earnings Forecast Decision

The following probit model is used to assess the earnings forecast decision and to examine whether the quality of corporate governance affects the probability that an earnings forecast is included in the prospectus.

$$\begin{aligned} FORECAST_i = {} & \alpha_0 + \alpha_1 GOVERNANCE_i + \alpha_2 RETOWN_i + \alpha_3 GNEWS_i \\ & + \alpha_4 HISTORY_i + \alpha_5 HORIZON_i + \alpha_6 UW-PRESTIGE_i \\ & + \alpha_7 AUDITOR_i + \alpha_8 COMPENSATION_i + \alpha_9 SIZE_i + \varepsilon_i \end{aligned} \quad (1)$$

where:

FORECAST = Indicator variable taking on the value of 1 if the firm voluntarily includes an earnings forecast in its prospectus, 0 otherwise;
GOVERNANCE = Calculated coefficient from principal component factor analysis on *ACINDEP*, *BODINDEP* and *DUALITY*;
RETOWN = Retained ownership based on the absolute value of the natural logarithm of $|\alpha + \text{Ln}\ (1-\alpha)|$, where $\alpha = (\text{N} - \text{Np} - \text{Ns})/\text{N}$;[4]
GNEWS = Indicator variable taking on the value of 1 if actual earnings in the IPO year/period are greater than prior period earnings (i.e., "good news" based on a random walk model), 0 otherwise;
HISTORY = Indicator variable taking on the value of 1 if earnings history is provided in the IPO for at least 5 periods, 0 otherwise;

3 Preliminary analysis indicated that almost all mining firms choose not to include a forecast in their prospectus, partly because valuation of mining firms is based on the extent of mineral deposits rather than short-term earnings prospects (Jog and McConomy, 2003). Therefore mining firms are excluded from the analysis.
4 *N* is the number of shares outstanding after completing the IPO; *Np* is the number of primary shares offered via the IPO; and *Ns* is the number of shares offered on a secondary basis via the IPO (Jog and McConomy, 2003).

Table 1
Time and Industry Distribution

Panel A: Time Distribution of Sample IPO Firms

Year	*Frequency*	*%*	*Cumulative%*
1992	11	3.70%	3.70%
1993	78	25.90%	29.60%
1994	40	13.30%	42.90%
1995	5	1.66%	44.56%
1996	30	9.96%	54.52%
1997	27	8.97%	63.49%
1998	24	7.97%	71.46%
1999	9	2.99%	74.45%
2000	22	7.30%	81.75%
2001	9	2.99%	84.74%
2002	7	2.32%	87.06%
2003	6	1.99%	89.05%
2004	30	9.96%	99.01%
2005	3	0.99%	100.00%
Total	301	100.00%	

Panel B: Industry Distribution of Sample IPO Firms

Industry	*SIC code*	*Frequency*	*%*
Oil and gas	1000–1999	46	15.28%
Manufacturing	2000–3999	114	37.87%
Transportation and public utilities	4000–4999	26	8.64%
Trade	5000–5999	27	8.97%
Finance, insurance and real estate	6000–6999	37	12.29%
Services	7000–7999	43	14.29%
Health services	8000–8999	7	2.33%
Unclassified establishments	9000–9999	1	0.33%
Total		301	100.00%

Note:
This table presents the time (Panel A) and industry (Panel B) distribution of sample IPO firms.

HORIZON = Number of months from the end of the latest interim results period included in the prospectus to the IPO's fiscal year end (i.e., forecast horizon);
UW-PRESTIGE = Indicator variable taking on the value of 1 for IPOs with a prestigious underwriter, 0 otherwise;[5]
AUDITOR = Indicator variable taking on the value of 1 if the firm is audited by a Big 4 or Big 6 firm, 0 otherwise;
COMPENSATION = Indicator variable taking on the value of 1 if the firm has a bonus or option plan in place at the IPO date, 0 otherwise;
SIZE = Natural logarithm of lagged total assets.

Prior research suggests that inclusion of a management earnings forecast in a prospectus is positively related to the likelihood of firms having good news to share

5 Underwriter prestige is based primarily on investment dealer rankings published in the *Financial Post 500*, with the top 10 investment dealers each year considered to be prestigious (Jog and McConomy, 2003).

Table 2

Principal Component Factor Analysis (Correlations > 0.40)

Variable	*Component 1 – Independence*
ACINDEP	0.705
BODINDEP	0.805
DUALITY	0.400
Eigenvalue	1.304
Variance explained (%)	43.47%
Cumulative variance explained (%)	43.47%

Note:
This table presents the results of the principal component factor analysis used to reduce the number of governance variables to a single factor. The components are not rotated because only one factor is extracted. Variables are defined in the Appendix.

and compensation arrangements. Similarly, prior research suggests that inclusion of a management earnings forecast is negatively related to retained ownership and forecast horizon. Prior research discussed above does not provide a specific direction for the relationship between a management earnings forecast and earnings history, underwriter quality, auditor quality and firm size. We control for these variables, while focusing on the quality of corporate governance. We use principal components factor analysis to build the variable *GOVERNANCE*. We apply the principal component analysis to three governance variables: the percentage of independent directors on the board of directors (*BODINDEP)*, the percentage of independent directors on the audit committee *(ACINDEP)*, and the presence of an independent chair on the board of directors *(DUALITY)*. Constraints on data availability restrict our ability to include other governance variables in the principal component analysis without severely reducing sample size. The first Canadian corporate governance guidelines were issued by the various Canadian stock exchanges in the 1990s (Dey, 1994). They were revised in 2005 (Toronto Stock Exchange, 2005). Except for Multilateral Instrument 52–110 on audit committees (Toronto Stock Exchange, 2004), compliance with these guidelines is not mandatory, as long as non-compliance is disclosed and discussed (Bédard et al., 2008). Our sample includes IPOs from 1992 to June 30, 2005, i.e., up to the adoption of MI 52–110. As such, sample firms are from a context where both governance attributes and disclosure are voluntary. While our context allows us to benefit from cross-sectional variance not observable when compliance with corporate governance guidelines is mandatory, it also limits the number of governance attributes available for most sample firms.

Table 2 presents the results of the principal components factor analysis applied to the three governance attributes disclosed by our sample firms. The components are not rotated because only one factor is extracted. Using .40 as the cut-off for component matrix coefficients, one factor emerges. Our factor explains 43.47% of the cumulative variance and has an eigenvalue of 1.304. Our factor is consistent with the relationships we wish to investigate in that its value increases with the quality of corporate governance. If the probability of forecasting increases (decreases) with the quality of corporate governance, then the coefficient for *GOVERNANCE* will be positive (negative) and significant for model 1.

(b) Constraints on Accruals Management to Meet Forecast

The following regression models are used to measure discretionary accruals and examine whether better corporate governance constrains managers' ability to use discretionary accruals to meet their earnings forecasts (to test the predictions based on prior research outlined above):

$$TOTACCRUALS_i = \gamma_0 + \gamma_1 \Delta SALES_i + \gamma_2 PPEi + \gamma_3 SALESGROWTH_i + e_i \quad (2)$$

$$\begin{aligned} DACCRUALS_i = {} & \beta_0 + \beta_1 (EBDA - FCST)_i + \beta_2 (EBDA - FCST)^* POSITIVE_i \\ & + \beta_3 (EBDA - FCST)^* GOVERNANCE_i + \beta_4 (EBDA - FCST)^* \\ & POSITIVE^* GOVERNANCE_i + \beta_5 POSITIVE^* \\ & GOVERNANCE_i + \beta_6 POSITIVE_i + \beta_7 GOVERNANCE_i \\ & + \beta_8 LEVERAGE_i + \beta_9 AUDITOR_i + \beta_{10} LOSS_i \\ & + \beta_{11} BTM_i + \beta_{12} HISTORY_i + \beta_{13} SIZE_i + {}_i \end{aligned} \quad (3)$$

where, for firm *i*:

TOTACCRUALS = Earnings for the IPO year (*t*) – cash flow from operations for the IPO year, scaled by average total assets;

$\Delta SALES$ = Revenue in *t* – revenue in *t* − *1*, scaled by average total assets;

PPE = Property, plant and equipment in *t*, scaled by average total assets;

SALESGROWTH = Revenue in *t* + *1* – revenue in *t*, scaled by revenue in *t;*

DACCRUALS = Estimated discretionary accruals for the IPO year, scaled by average total assets;

(EBDA–FCST) = Earnings before discretionary accruals minus forecasted earnings, divided by the absolute value of forecasted earnings for the IPO year;

POSITIVE = Indicator variable taking on the value of 1 if *(EBDA–FCST)* is positive, 0 otherwise;

GOVERNANCE = Calculated coefficient from principal component factor analysis on *ACINDEP*, *BODINDEP* and *DUALITY;*

LEVERAGE = Total debt at the end of the IPO year divided by shareholders' equity at the end of the IPO year;

AUDITOR = Indicator variable taking on the value of 1 if the firm's auditor is a Big 4 or Big 6 firm, 0 otherwise;

LOSS = Indicator variable taking on the value of 1 if net income for the IPO year is negative, 0 otherwise;

BTM = Book value of equity at the end of the IPO year divided by market value of equity at the end of the IPO year;

HISTORY = Indicator variable taking on the value of 1 if earnings history is provided in the IPO for at least 5 periods, 0 otherwise; and

SIZE = Natural logarithm of lagged total assets.

Financial variables are scaled by average total assets where applicable (Armstrong et al., 2009), and *t* refers to the IPO year. Model (2) above is used to estimate

non-discretionary (normal) and discretionary accruals. Consistent with Hribar and Collins (2002), we measure total accruals (*TOTACCRUALS*) as the difference between net income and cash flow from operations (Gunny, 2010). Normal, non-discretionary accruals reflect a firm's economic environment or its underlying level of activity independent of strategic earnings management by its executives. The model implies that a firm's current period total accruals (*TOTACCRUALS*) are related in a systematic manner to its current performance ($\Delta SALES$), the level of its property, plant and equipment (*PPE*) and sales growth (*SALESGROWTH*). Prior empirical evidence is consistent with such propositions. Change in sales proxies for firm performance (Jones, 1991). Property, plant and equipment serves to control for other non-discretionary components, such as the portion of depreciation expenses that is not conditional on the firm's performance or activity level or upon managerial discretion (Jones, 1991). Sales growth controls for non-discretionary working capital accruals that naturally occur due to firm growth (Collins et al., 2012).

Consistent with prior IPO-related earnings management research (e.g., Teoh et al., 1998a; Teoh et al., 1998b; and Morsfield and Tan, 2006), we use the cross-sectional adaptation of the Jones (1991) model to calculate normal accruals, as discussed below. We then use the performance-matching procedure suggested by Kothari et al. (2005) to calculate performance-matched discretionary accruals. Our approach involves the following steps. First, we estimate the Jones model regression cross-sectionally for a sample of all available firms in Compustat in the same one-digit SIC code as the IPO firm, excluding the IPO firm for each year in the period 1992–2005. At least 10 observations must be available in order to perform the regression.[6] The cross-sectional Jones model discretionary accrual is calculated as the difference between actual total accruals (*TOTACCRUALS*) and the predicted value of non-discretionary accruals (*NORMACCRUALS*). Second, we match each IPO firm with the non-IPO Compustat firm in the same one-digit SIC code and year with the closest return on assets (ROA). The performance-matched discretionary accrual (*DACCRUALS*) is equal to the difference between the cross-sectional Jones model discretionary accrual and the corresponding cross-sectional Jones model discretionary accrual for the performance-matched firm.

(EBDA–FCST) is used to assess IPO firms' use of discretionary accruals to meet their earnings forecasts. We distinguish between IPO firms with earnings before discretionary accruals below and above forecasted earnings by interacting *(EBDA–FCST)* with *POSITIVE*. If firms with EBDA below forecasted earnings use discretionary accruals to increase reported earnings and meet their earnings forecasts, then *(EBDA–FCST)* will be negatively associated with discretionary accruals. To assess whether firms with EBDA above forecasted earnings also use discretionary accruals to decrease reported earnings, the impact of the interaction term *(EBDA–FCST)*POSITIVE* is assessed. *(EBDA–FCST)*GOVERNANCE* and *(EBDA–FCST)*POSITIVE*GOVERNANCE* are used to test our prediction that firms' ability to use discretionary accruals to meet earnings forecasts decreases as the quality of governance increases. If IPO firms' ability to use discretionary accruals to meet their forecasts decreases as the quality of corporate governance increases, then *(EBDA–FCST)*GOVERNANCE* should be positive

6 We do not use the two-digit SIC code to estimate the Jones model cross-sectionally because many two-digit sub-industries have fewer than 10 observations available.

and significant, and similarly *(EBDA–FCST)* GOVERNANCE* POSITIVE* is assessed as part of our (joint) tests of significance.[7]

Six control variables are added to the model. Firms with higher leverage may attempt to improve earnings by selecting income-increasing accounting methods to meet their debt covenants (Watts and Zimmerman, 1990). However, higher leverage may also be associated with less reliance on equity financing for IPO firms, and less incentive to manage discretionary accruals to meet investors' expectations (Cormier and Martinez, 2006). Hence, no directional prediction is made for *LEVERAGE*. High quality auditors have been shown to mitigate and prevent the use of discretionary accruals during the IPO (Zhou and Elder, 2002). As such, we expect the coefficient on *AUDITOR* to be negative and significant. Firms who are reporting a loss might have an incentive to use discretionary accruals to decrease the reported loss (Kothari et al., 2005) or avoid small losses (Eames and Kim, 2012). If such is the case, then we expect the coefficient on *LOSS* to be positive and significant. Prior research also shows that the probability of managing earnings is associated with firms' growth opportunities (Skinner and Sloan, 2002). No directional prediction is made for the growth proxy *BTM*. IPO firms with longer previous earnings records might have more flexibility to manage earnings because they can make adjustments prior to the IPO. We include *HISTORY* to control for this possibility, but make no directional prediction.[8] Firm size is added as a control variable to be consistent with most prior research on earnings management. No directional prediction is made for *SIZE*.

Our results could be affected by selection bias since many IPO firms choose not to issue a forecast. We use the Heckman procedure to test for the potential effects of selection bias (Heckman, 1997). This involves using residuals from model (1) to calculate a selection bias variable, the Inverse Mills ratio. The ratio is then added to model (3) as an additional independent variable to control for selection bias.

(c) Predictive Value of Accruals

Consistent with Subramanyam (1996), the following model is used to test for the predictive value of discretionary accruals:

$$\begin{aligned} LEADCFLOW_i = {} & \delta_0 + \delta_1 CFLOW_i + \delta_2 NORMACCRUALS_i + \delta_3 DACCRUALS_i \\ & + \delta_4 DACCRUALS^* GOVERNANCE_i + \delta_5 GOVERNANCE_i \\ & + E_i \end{aligned} \tag{4}$$

7 In the results section we elaborate on how the various variables are tested. Although we discuss individual interaction terms in this section, our detailed testing and tables in the results section outline the specific joint tests of coefficients performed.

8 Our second stage model does not include *HORIZON* as an independent variable ensuring that the criteria of exclusion of at least one variable has been met to avoid identification issues. *HORIZON* has been excluded as it is a "within-year" variable. There is no empirical evidence or theory that companies with, say, 4 months left to go before their year-end date at the time of forecasting are more likely to manage their earnings than those with, say, 7 months to go. To confirm our assertion that *HORIZON* is unrelated to *DACCRUALS*, we tested this empirically by running Table 4 with *HORIZON* as an independent variable. The result was not significant (in fact it was very insignificant) and *HORIZON* has not been included in the accruals regressions.

where:

LEADCFLOW = Industry adjusted cash flow from operations for the year following the IPO year, scaled by average total assets;
CFLOW = Cash flow from operations for the IPO year, scaled by average total assets;
NORMACCRUALS = *TOTACCRUALS* for the IPO year – estimated discretionary accruals for the IPO year, scaled by average total assets;
DACCRUALS = Estimated discretionary accruals for the IPO year, scaled by average total assets;
GOVERNANCE = Calculated coefficient from principal component factor analysis on *ACINDEP*, *BODINDEP* and *DUALITY*.

Financial variables are scaled by average total assets (Armstrong et al., 2009). Subramanyam (1996) decomposes earnings into three components: cash flows from operations, normal accruals and discretionary accruals. He shows that current values of discretionary accruals are associated with future cash flows from operations after controlling for current cash flows from operations and normal accruals. His results are consistent with managers using discretionary accruals to communicate private information about future profitability to investors. Consistent with Subramanyam (1996), we expect current cash flows from operations and normal accruals to be positively associated with future cash flows from operations. Model (4) is used to test the impact of better governance on the predictive value of discretionary accruals reported by forecasters versus non-forecasters by splitting the sample based on the *FORECAST* indicator variable. Model (4) is also used to test the impact of better governance on the predictive value of discretionary accruals reported by forecasting firms with earnings before discretionary accruals below (versus above) forecasted earnings by splitting the sample based on *FCSTMISS*, an indicator variable taking on the value of 1 if *(EBDA–FCST)* is negative, and 0 otherwise (i.e., *FCSTMISS* = 1 firms would miss their forecast before taking discretionary accruals into account). We use the indicator variable *FCSTMISS* rather than the continuous variable *(EBDA–FCST)* interacted with the indicator variable *POSITIVE* (as in model (3)) to avoid having to utilize three-way interaction terms which would reduce the power of our model significantly.

We split the sample between forecasters and non-forecasters to test H_2. If forecasters (non-forecasters) use discretionary accruals to communicate private information about the future profitability of the firm, then *DACCRUALS* will be positive and significant when *FORECAST* = 1 (FORECAST = 0). If reported discretionary accruals are a distortion of earnings to meet earnings forecast, then *DACCRUALS* will be either negative and significant or not significant. *DACCRUALS*GOVERNANCE* is used to test H_3. If the predictive value of discretionary accruals reported by forecasters increases with the quality of corporate governance, then *DACCRUALS*GOVERNANCE* will be positive and significant (assessed initially for forecasters and non-forecasters; and then separately for *FCSTMISS* = 0 and *FCSTMISS* = 1). If the predictive value of discretionary accruals is not influenced by the quality of corporate governance, then the coefficients on *DACCRUALS*GOVERNANCE* will be either negative and significant or not significant.[9]

9 More specifically we perform a joint test of coefficients relating to *DACCRUALS*, *DACCRUALS * GOVERNANCE* and *GOVERNANCE* to assess the use of discretionary accruals by firms with stronger governance to

4. RESULTS

(i) The Management Earnings Forecast Decision

Table 3 – Panel A compares the forecasting and non-forecasting sub-samples. As the table indicates, non-forecasting firms have a higher governance score (difference significant at the 0.001 level). Non-forecasting firms have higher retained ownership on average than forecasting firms (*RETOWN* significant at 0.001) consistent with prior research that suggests that the forecast and retained ownership signals operate as substitutes rather than complements (Li and McConomy, 2004). As expected forecasting firms are more likely to have good news to share with earnings in the IPO year being greater than pre-IPO earnings (*GNEWS* significant at 0.001), and forecasters also have longer earnings history making the provision of a forecast somewhat easier for such firms (*HISTORY* significant at 0.001). All other differences are not significant.

Table 3 – Panel B presents the correlation matrix for the variables included in model (1), and correlations significant at 5% or better are highlighted in the table. Significant correlations among the independent variables include *GOVERNANCE* negatively correlated to *HISTORY* (Pearson correlation $= \rho = -0.325$) and *UW-PRESTIGE* negatively correlated with retained ownership ($\rho = -0.177$). *GNEWS, UW-PRESTIGE* and *AUDITOR* are positively correlated with *SIZE* ($\rho = 0.217$, $\rho = 0.368$ and $\rho = 0.185$, respectively). There are no other significant correlations among the independent variables.

Table 3 – Panel C provides the results regarding the forecasting model and it is used to assess the results of H_1 regarding the influence of corporate governance on the provision of voluntary forecasts of earnings in IPO prospectus. The results are consistent for the regressions run with and without the Heckman procedure (used to control for self-selection bias). The results indicate that firms with better governance are less likely to forecast (significant at the 1% level (7% for the Heckman model)). These results suggest that firms with more independent board of directors and audit committees (better corporate governance) are more reluctant to provide an earnings forecast. Such firms may be acting more conservatively to limit the risk of litigation should a forecast be provided and not achieved.

The results of the other variables in Table 3 – Panel C are consistent with our univariate results and prior research. We focus on the results using the Heckman model for brevity.[10] In particular, forecasters have significantly lower retained ownership than non-forecasters, consistent with these two signals of value operating as substitutes (*RETOWN* significant at 1%). Forecasters are significantly more likely to have good news to share and have more earnings history to draw upon, on average (*GNEWS* and *HISTORY* both significant at 0.001). Other variables are not significant.

communicate private information about the future profitability of the firm. In the interest of brevity, we just discuss the key interaction terms in this section and focus on the joint tests in the results section.

10 Lennox et al. (2012) provide evidence that the Heckman two-stage test is sensitive to model specification and sample composition. Therefore we also utilize a treatment effect framework to control for self-selection as a robustness check of our results presented in Tables 3 and 4 (Demirakos et al. 2010). The results using the treatment effect framework are consistent with those presented in the tables.

Table 3

The Forecasting Decision

Panel A: Descriptive Statistics

	Total (N = 296)		*Forecasting (N = 106)*		*Non-forecasting (N = 190)*		*Diff. in means*
Variable	*Mean*	*Median*	*Mean*	*Median*	*Mean*	*Median*	*signif. level*
GOVERNANCE	0.3292	0.3365	0.0000	−0.0679	0.5201	0.5864	0.001
RETOWN	0.5178	0.4685	0.4350	0.3942	0.5667	0.5564	0.001
GNEWS	0.6512	1.0000	0.8378	1.0000	0.5421	1.0000	0.001
HISTORY	0.4013	0.0000	0.5946	1.0000	0.2872	0.0000	0.001
HORIZON	7.8820	9.0000	7.6820	9.0000	8.0000	9.0000	ns
UW-PRESTIGE	0.7567	1.0000	0.8018	1.0000	0.7302	1.0000	ns
AUDITOR	0.8571	1.0000	0.8559	1.0000	0.8579	1.0000	ns
COMPENSATION	0.6212	1.0000	0.6667	1.0000	0.5947	1.0000	ns
SIZE	10.2834	10.1802	10.3721	10.3234	10.2313	10.0924	ns

Panel B: Correlation Matrix

	(I)	*(II)*	*(III)*	*(IV)*	*(V)*	*(VI)*	*(VII)*	*(VIII)*	*(IX)*	*(X)*
FORECAST (I)	1.000									
GOVERNANCE (II)	−0.219†	1.000								
RETOWN (III)	−0.186†	−0.001	1.000							
GNEWS (IV)	0.299†	−0.108	−0.024	1.000						
HISTORY (V)	0.303†	−0.325†	−0.073	0.183	1.000					
HORIZON (VI)	−0.048	0.036	0.034	−0.015	0.024	1.000				
UW-PRESTIGE (VII)	0.081	0.018	−0.177†	0.093	0.094	0.031	1.000			
AUDITOR (VIII)	−0.003	0.041	0.089	−0.040	0.005	0.102	0.123	1.000		
COMPENSATION(IX)	0.072	−0.005	0.065	0.032	0.011	0.049	0.052	0.014	1.000	
SIZE (X)	0.035	0.104	0.035	0.217†	0.106	0.055	0.368†	0.185†	0.006	1.000

Panel C: Multivariate Analysis (Dependent Variable = *FORECAST*)

Variable	*Predicted Sign*	*Coefficient(1)*	*Signif. Level*	*Heckman Coefficient*	*Significance Level*
GOVERNANCE	+/−	−0.1821	0.012	−0.1492	0.073
RETOWN	−	−0.7867	0.001	−0.7010	0.006
GNEWS	+	0.8306	0.001	0.8070	0.001
HISTORY	+/−	0.6137	0.001	0.6835	0.001
HORIZON	−	−0.0159	ns	−0.0089	ns
UW-PRESTIGE	+/−	0.0041	ns	−0.0078	ns
AUDITOR	+/−	0.1252	ns	0.0966	ns
COMPENSATION	+	0.2681	0.055	0.2040	ns
SIZE	+/−	−0.0215	ns	−0.0007	ns
N		296		273	
Wild Chi^2		66.52	0.001	202.02	0.001
Pseudo R^2		17.8%			
Correctly classified		70.6%			

Note:

This table examines the relationship between the probability of IPO firms issuing earnings forecasts and the quality of corporate governance. Panels A and B report descriptive statistics and Pearson correlations. Panel C presents the multivariate test results.

Test of Model (1):

$$FORECAST_i = \alpha_0 + \alpha_1 GOVERNANCE_i + \alpha_2 RETOWN_i + \alpha_3 GNEWS_i + \alpha_4 HISTORY_i + \alpha_5 HORIZON_i + \alpha_6 UW-PRESTIGE_i + \alpha_7 AUDITOR_i + \alpha_8 COMPENSATION_i + \alpha_9 SIZE_i + \varepsilon_i$$

T-statistics used to determine significance levels are based on robust standard errors. ns = not significant (significance levels are two-tailed for predicted sign of +/− otherwise one-tailed). † = correlation significant at 5% level. Variables are defined in the Appendix.

(ii) Constraints on Accruals Management to Meet Forecast

Table 4 – Panel A compares forecasting firms with earnings before discretionary accruals (EBDA) lower than their earnings forecast [(*EBDA–FCST*) <0] to firms with EBDA higher than their earnings forecast. Consistent with their incentive to increase (decrease) earnings to meet the forecast, firms with EBDA below (above) forecast have mean discretionary accruals (*DACCRUALS*) of 0.1021 (–0.1581), and median *DACCRUALS* of 0.0671 (–0.1013). The difference in means is significant at the 0.001 level.[11]

Table 4 – Panel B shows the results regression after taking into account the two-step Heckman procedure to control for possible selection bias. The model is significant ($p < 0.001$). As predicted, (*EBDA–FCST)* is negatively associated with the magnitude of discretionary accruals (significant at 0.001). This suggests that IPO firms with EBDA below forecasted earnings use discretionary accruals to increase reported earnings and meet their earnings forecast. To assess the result for firms that achieve or "beat" their forecast, we perform the joint test of the (*EBDA–FCST*), (*EBDA–FCST*)**POSITIVE* and *POSITIVE* coefficients. The result is negatively associated with the magnitude of discretionary accruals (test of $\beta_1 + \beta_2 + \beta_6 = 0$ significant at 0.001). Consistent with prior research, the combination of these results suggests that firms with real earnings that fall short of forecasted earnings (i.e., firms that would "miss" the forecast) use discretionary accruals to increase reported earnings whereas firms with real earnings in excess of forecasted earnings (i.e., firms that would "beat" the forecast) use discretionary accruals to decrease reported earnings (i.e., their behaviour is symmetrical).

The joint test for firms that "miss" their forecast and have better governance (i.e., the test of $\beta_1 + \beta_3 + \beta_7 = 0$*)* is marginally significant consistent with such firms using discretionary accruals in an effort to "meet" their forecast, but the combined coefficient is reduced by β_3 and β_7 resulting in marginal overall significance (10%). A separate joint test of firms that beat their forecast (where *POSITIVE* = 1) and that have better governance (the joint test of $\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \beta_6 + \beta_7 = 0$*)* indicates that, overall, discretionary accruals remain significantly negative for such firms (consistent with these firms using discretionary accruals to reduce earnings) (significant at 0.01). Overall, these results are consistent with firms that have stronger governance having a greater focus on constraining income increasing discretionary accruals, and being less focused on constraining income reducing (conservative) behaviour. *LEVERAGE* is negative and significant at the 1% level, consistent with the intuition that leveraged firms being more inclined to use discretionary accruals to decrease earnings. The other variables are not significant.[12]

11 We exclude all observations with standardized residuals greater than 1.5 in all regressions, to reduce the impact of outliers on the results. The regressions are then re-estimated with the coefficient tests being based on White's *t*-statistics (for regressions in all tables).

12 If we repeat the analysis in Table 4 without using the Heckman procedure, all of our joint tests remain significant at the levels reported in the table. We also reran Table 4, Panel B, including *RETOWN* and *UW-PRESTIGE* as independent variables as prior research presents evidence that these variables are associated with accrual earnings management (Fan, 2007; and Jo et al., 2007). Our results do not change, and *RETOWN* and *UW-PRESTIGE* are insignificant for our sample. We have not included these variables in the updated Table 4 as our sample size is limited, and including too many variables may affect the power of the tests.

Table 4

Accruals Management

Panel A : Descriptive Statistics

	Total (N = 111)		*(EBDA – FCST) < 0 (N = 73)*		*(EBDA – FCST) > 0 (N = 38)*		
Variable	*Mean*	*Median*	*Mean*	*Median*	*Mean*	*Median*	*Diff. in means signif. level*
TOTACCRUALS	−0.0523	−0.0442	−0.0761	−0.0654	−0.0066	−0.0014	0.004
NORMACCRUALS	−0.0156	−0.0295	0.0231	−0.0129	−0.0899	−0.0413	0.001
DACCRUALS	0.0131	0.0197	0.1021	0.0671	−0.1581	−0.1013	0.001
GOVERNANCE	0.0000	−0.0679	0.0341	0.1414	−0.0639	−0.1445	ns
LEVERAGE	0.8485	0.7578	0.9178	0.7846	0.7191	0.7331	ns
AUDITOR	0.8559	1.0000	0.8356	1.0000	0.8947	1.0000	ns
LOSS	0.1261	0.0000	0.1781	0.0000	0.0263	1.0000	0.069
BTM	0.2672	0.1626	0.2465	0.1540	0.3030	0.1784	ns
HISTORY	0.6408	1.0000	0.6308	1.0000	0.6579	1.0000	ns
SIZE	10.3721	10.3234	10.2847	10.2327	10.5399	10.3886	ns

Panel B: Multivariate Analysis – Heckman Two-step (DEPENDENT VARIABLE = *DACCRUALS)*

Variable		*Predicted Sign*	*Coefficient Coefficient (or F-stat for tests of sums of coefficients)*	*Significance Level*
(EBDA–FCST)	β_1	−	−0.1095	0.001
*(EBDA–FCST)*POSITIVE*	β_2	+/−	0.0559	0.006
*(EBDA–FCST)*GOVERNANCE*	β_3	+	0.0310	0.076
*(EBDA–FCST)*POSITIVE*GOVERNANCE*	β_4	−	−0.0392	0.079
*POSITIVE*GOVERNANCE*	β_5	+/−	−0.0040	ns
POSITIVE	β_6	+/−	−0.0446	ns
GOVERNANCE	β_7	+/−	0.0129	ns
LEVERAGE	β_8	+/−	−0.0607	0.006
AUDITOR	β_9	−	0.0238	ns
LOSS	β_{10}	+	−0.0431	ns
BTM	β_{11}	+/−	−0.0264	ns
HISTORY	β_{12}	+/−	−0.0373	ns
SIZE	β_{13}	+/−	−0.0029	ns
INVERSE MILLS RATIO			−0.0696	ns
N			273	
Chi^2			202.02	0.001
$\beta_1 + \beta_2 + \beta_6 = 0$			15.15	0.001
$\beta_1 + \beta_3 + \beta_7 = 0$			2.59	0.10
$\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \beta_6 + \beta_7 = 0$			8.90	0.003

Note:

This table examines the role of discretionary accruals, and the extent to which corporate governance limits their use in achieving earnings forecasts included in prospectuses. Panel A reports descriptive statistics and Panel B presents the multivariate test results.

Test of model (3):

$$DACCRUALS_i = \beta_0 + \beta_1(EBDA - FCST)_i + \beta_2(EBDA - FCST)^*POSITIVE_i + \beta_3(EBDA - FCST)^* GOVERNANCE_i + \beta_4(EBDA - FCST)^*POSITIVE^*GOVERNANCE_i + \beta_5 POSITIVE^*GOVERNANCE_i + \beta_6 POSITIVE_i + \beta_7 GOVERNANCE_i + \beta_8 LEVERAGE_i + \beta_9 AUDITOR_i + \beta_{10} LOSS_i + \beta_{11} BTM_i + \beta_{12} HISTORY_i + \beta_{13} SIZE_i + {}_i$$

T-statistics used to determine significance levels are based on robust standard errors. ns = not significant (significance levels are two-tailed for predicted sign of +/− otherwise one-tailed). † = correlation significant at 5% level. Variables are defined in the Appendix.

(iii) Predictive Value of Discretionary Accruals

Table 5 – Panel A compares the forecasting and non-forecasting sub-samples. As the table indicates, non-forecast firms report lower normal accruals (difference marginally significant at 10%). All other differences are not significant.

Table 5 – Panel B presents the results of the OLS regressions examining the predictive value of discretionary accruals reported by forecasters vs. non-forecasters (i.e., *FORECAST* = 1 versus *FORECAST* = 0). The first two columns of coefficients present the results of the model examining potential differences in the predictive value of discretionary accruals reported by forecasters and non-forecasters, whereas the third and fourth columns of coefficients examine the incremental impact of governance on the predictive value of discretionary accruals reported by forecasters and non-forecasters. All four regressions are significant at the 0.001 level and we discuss the regressions that exclude governance related variables first. Consistent with Subramanyam (1996), current cash flows are positively associated with future cash flows (*CFLOW* significant at 0.001). Normal accruals are also positively associated with future cash flows (*NORMACCRUALS* significant at 7% for non-forecasters and 0.001 for forecasters). Discretionary accruals are significantly (negatively) associated with future cash flows for the forecasting group only (δ_3 significant at 1%), suggesting that discretionary accruals of forecaster firms tend to reverse in the year after the IPO. This result may mask the differences in motivations of forecasters that "miss" their forecast (to increase *DACCRUALS*) versus those that "beat" their forecast (motivated to decrease *DACCRUALS*). We address this further in Table 6 (below) where we partition forecasters into two groups (those that "miss" versus "beat" the forecast).

The model presented in the third and fourth columns of coefficients in Table 5 includes the governance variable. Consistent with Subramanyam (1996), current cash flows are positively associated with future cash flows (significant at the 0.001 level). Consistent with the results from the first two columns of coefficients, *NORMACCRUALS* is positive and significant (at 0.07 for non-forecasters and 0.001 for forecasters). The results for the forecasters with better governance (joint test of $(\delta_3 + \delta_4 + \delta_5 = 0)$ are significant at 0.001, consistent with discretionary accruals reversal. The results for the non-forecasters remain insignificant. As discussed above, there may be differences in motivations of forecasters that "miss" their forecast (to increase *DACCRUALS*) versus those that "beat" their forecast (motivated to decrease *DACCRUALS*). Therefore we analyze this further in Table 6 (as discussed below).

In Table 6, we repeat the analysis of the impact of governance on the predictive value of discretionary accruals reported by forecasters only, distinguishing between forecasters with EBDA below and above forecasted earnings. Table 6 – Panel A presents descriptive statistics. Forecasters with EBDA below forecasted earnings (*FCSTMISS* = 1) report significantly lower cash flow from operations in the IPO year (*CFLOW* significant at 1%), but higher normal accruals (*NORMACCRUALS* significant at 0.001). Consistent with their incentive to increase (decrease) earnings to meet the forecast, *FCSTMISS* = 1 firms have positive discretionary accruals, whereas firms that "beat" the forecast (*FCSTMISS* = 0) have negative *DACCRUALS*. The difference in means in *DACCRUALS* is significant at the 0.001 level. Results for the interaction term of *DACCRUALS*GOVERNANCE* are also presented in Panel A, and results are consistent with expectations.

Table 5

The Impact of Governance on the Predictive Value of Forecasters' Discretionary Accruals

Panel A: Descriptive Statistics

	Total (N = 289)		*Forecasting (N = 105)*		*Non-forecasting (N = 184)*		
Variable	*Mean*	*Median*	*Mean*	*Median*	*Mean*	*Median*	*Diff. in means signif. level*
LEADCFLOW	0.0747	0.0288	0.1937	0.0771	0.0067	−0.0084	ns
CFLOW	0.1760	0.0912	0.0813	0.1195	0.2292	0.0352	ns
NORMACCRUALS	−0.0619	−0.0335	−0.0156	−0.0295	−0.0890	−0.0386	0.099
DACCRUALS	0.0341	0.0313	0.0131	0.0196	0.0464	0.0388	ns
*DACCRUALS*GOVERNANCE*	0.0566	0.0015	0.0018	0.0029	0.0884	0.0011	ns

Continued

Table 5 (Continued)

Panel B: Multivariate Analysis (Dependent Variable = *LEADCFLOW*)

			FORECAST = 0		*FORECAST* = 1		*FORECAST* = 0		*FORECAST* = 1	
Variable	*Coeff.*	*Predicted Sign*	*Coefficient & signif level (F-stat & signif level for tests of sums of coeff.)*		*Coefficient & signif level (F-stat & signif level for tests of sums of coeff.)*		*Coefficient & signif level (F-stat & signif level for tests of sums of coeff.)*		*Coefficient & signif level (F-stat & signif level for tests of sums of coeff.)*	
CFLOW	δ_1	+	0.6258	0.001	1.2106	0.001	0.6251	0.001	1.1554	0.001
NORMACCRUALS	δ_2	+	1.2096	0.071	1.3404	0.001	1.0538	0.070	1.3047	0.001
DACCRUALS	δ_3	+/−	−0.9014	ns	−0.5974	0.006	−1.0634	ns	−0.6646	0.009
*DACCRUALS*GOVERNANCE*	δ_4	+/−					0.1277	ns	−0.4322	0.019
GOVERNANCE	δ_5	+/−					0.0257	ns	0.0257	ns
N			138		95		137		95	
F-statistic			1,062.48	0.001	15.07	0.001	809.27	0.001	8.86	0.001
R^2			97.3%		41.0%		97.3%		39.5%	
$\delta_3 + \delta_4 + \delta_5 = 0$							2.00	ns	8.19	0.001

Note:
This table examines the relationship between the cash flow from operations for the year that follows the IPO, and the role played by corporate governance in enhancing the predictive value of discretionary accruals reported by forecasters vs. non-forecasters. Panel A reports descriptive statistics and Panel B presents the multivariate test results.
Test of model (4):

$$LEADCFLOW_i = \delta_0 + \delta_1 CFLOW_i + \delta_2 NORMACCRUALS_i + \delta_3 DACCRUALS_i + \delta_4 DACCRUALS^* GOVERNANCE_i + \delta_5 GOVERNANCE_i + E_i$$

T-statistics used to determine significance levels are based on robust standard errors. ns = not significant (significance levels are two-tailed for predicted sign of +/− otherwise one-tailed). † = correlation significant at 5% level. Variables are defined in the Appendix.

Table 6

The Impact of Governance on the Predictive Value of Discretionary Accruals Reported by Forecasters Who Would Otherwise Have Missed Their Forecasts

Panel A: Descriptive Statistics

	Below Forecast (FCSTMISS = 1) (N = 59)		*Above Forecast (FCSTMISS = 0) (N = 38)*		*Diff. in means*
Variable	*Mean*	*Median*	*Mean*	*Median*	*signif. level*
LEADCFLOW	0.0125	0.0317	0.3195	0.1812	0.001
CFLOW	0.0551	0.1083	0.2970	0.1862	0.004
NORMACCRUALS	0.0293	−0.0038	−0.0899	−0.0413	0.001
DACCRUALS	0.1045	0.0526	−0.1580	−0.1013	0.001
*DACCRUALS*GOVERNANCE*	−0.0258	−0.0001	0.0313	0.0111	0.055

Panel B: Multivariate Analysis (Dependent Variable = *LEADCFLOW*)

			FCSTMISS = 0		*FCSTMISS* = 1	
Variable		*Predicted Sign*	*Coefficient & signif level (F-stat & signif level for tests of sums of coeff.)*		*Coefficient & signif level (F-stat & signif level for tests of sums of coeff.)*	
CFLOW	Ω_1	+	1.4745	0.001	0.9452	0.001
NORMACCRUALS	Ω_2	+	0.7195	0.001	0.6472	0.004
DACCRUALS	Ω_3	+/−	0.7697	0.010	−0.1820	ns
*DACCRUALS*GOVERNANCE*	Ω_4	+/−	1.2121	0.001	−0.1877	ns
GOVERNANCE	Ω_5	+/−	0.0633	0.046	−0.0165	ns
N			31		54	
F-statistic			99.40	0.001	64.61	0.001
R^2			94.20%		82.81%	
$\Omega_3 + \Omega_4 + \Omega_5 = 0$			12.79	0.001	1.36	ns

Note:
This table examines the relationship between the cash flow from operations for the year that follows the IPO, and the role played by corporate governance in enhancing the predictive value of discretionary accruals reported by forecasters who would otherwise have missed their forecasts (*FCSTMISS* = 1) vs. those who would have beat their forecast (*FCSTMISS* = 0). Panel A reports descriptive statistics and Panel B presents multivariate test results.
Test of model (4):

$$LEADCFLOW_i = \Omega_0 + \Omega_1 CFLOW_i + \Omega_2 NORMACCRUALS_i + \Omega_3 DACCRUALS_i + \Omega_4 DACCRUALS{*}GOVERNANCE + \Omega_5 GOVERNANCE_i + \varepsilon_i$$

T-statistics used to determine significance levels are based on robust standard errors. ns = not significant (significance levels are two-tailed for predicted sign of +/− otherwise one-tailed). † = correlation significant at 5% level. Variables are defined in the Appendix.

Table 6 – Panel B presents the results of OLS regressions examining the impact of governance on the predictive value of discretionary accruals reported by forecasters only. The models are significant at the 0.001 level. Consistent with Subramanyam (1996), current cash flows (*CFLOW*) are positively associated with future cash flows and the association is significant at the 0.001 level, and *NORMACCRUALS* is also significant at 0.001 for firms that make their forecast and 0.01 for those that miss it (i.e., for both the *FCSTMISS* = 0 and *FCSTMISS* = 1 columns). *DACCRUALS* are positively associated with future cash flows (significant at the 1% level), consistent with forecasters that "beat" the forecast (*FCSTMISS* = 0) communicating private information about future profitability to investors. In contrast, *DACCRUALS* is not significant for firms that would otherwise miss their forecast (*FCSTMISS* = 1). We also assess *DACCRUALS* separately

for the group of firms with better governance for those that would "beat" versus those that would "miss" their forecast via the joint test of ($\Omega_3 + \Omega_4 + \Omega_5 = 0$). We find a much higher level of significance and higher coefficients for firms that "beat" their forecast and that have stronger corporate governance (joint test of $\Omega_3 + \Omega_4 + \Omega_5 = 0$ significant at 0.001). The results for firms that miss their forecast are not statistically significant, even for those firms with stronger governance.

Overall, the results suggest that when firms miss their forecast and use discretionary accruals in an attempt to attain the forecast, the discretionary accruals do not have good predictive value for next year's cash flows (even for firms with better corporate governance). However, for firms that beat their forecast, the discretionary accruals are predictive of the next year's cash flows, and this result is strong, particularly for firms with better corporate governance.

5. CONCLUSION

This paper investigates the following research questions: (a) do corporate governance factors help differentiate forecasting IPO firms from non-forecasting firms; (b) do IPO firms manage earnings in the year of going public (if so, is the earnings management affected by the extent to which actual earnings deviate from the amount forecast and stronger corporate governance environments); and (c) is the predictive value of discretionary accruals higher for firms with better corporate governance.

Our results indicate that firms with better corporate governance are less likely to forecast. These results suggest that an improved corporate governance environment in the IPO context is associated with reluctance to provide an earnings forecast. Such firms may be acting more conservatively to limit the risk of litigation should a forecast be provided and not achieved.

Second, consistent with our expectations, we find IPO firms use discretionary accruals in the year of the IPO to meet their earnings forecast. We also show that, consistent with prior research, better corporate governance moderates the use of accruals management to meet voluntary earnings forecasts.

Third, we find that discretionary accruals are positively associated with future cash flows, and that the association is affected by whether or not the firm is a forecaster and by the quality of corporate governance. For example, managers of forecaster firms are able to use discretionary accruals to communicate private information about future profitability. This communication appears to be enhanced by stronger corporate governance, consistent with more conservative use of discretionary accruals by such firms. Further analysis of the forecaster group indicates that managers of forecast firms who beat their forecast are best able to provide predictive information to the market about next year's accruals. And, better corporate governance is associated with improved predictive value for these discretionary accruals. It appears that stronger governance accentuates the tendency to decrease discretionary accruals by IPOs that beat their forecast, and this is associated with higher predictive value for these discretionary accruals.

Our findings have implications for regulators and investors. For example, as regulators move to strengthen corporate governance regimes, they should be aware that a side effect may be that firms become more reluctant to provide voluntary earnings forecasts for investors in documents such as IPO prospectuses. Also investors

should be aware that IPO firms may use accruals management to meet forecasts; and they may want to consider whether or not the firm would have missed its forecast without the use of discretionary accruals. Future research may wish to consider separate testing of the association between discretionary accruals and future stock returns and operating performance for IPOs (see Teoh et al., 1998a; Teoh et al., 1998b; and Fan, 2007). Our results suggest that the relationships may be affected by the strength of corporate governance.

Our paper contributes to the IPO earnings management literature by examining the role played by better corporate governance. Increased levels of corporate governance affect the propensity of IPOs to forecast, the extent to which discretionary accruals are used to achieve amounts forecast, and the predictive ability of the discretionary accruals for the subsequent year's cash flows.

APPENDIX

Variable Definitions

ACINDEP = Percentage of independent directors on the audit committee at the IPO date.

BODINDEP = Percentage of independent directors on the board of directors at the IPO date.

DUALITY = Indicator variable taking on the value of 1 if the Chair of the board is not CEO, 0 otherwise.

FORECAST = Indicator variable taking on the value of 1 if the firm voluntarily includes an earnings forecast in its prospectus, 0 otherwise.

GOVERNANCE = Calculated coefficient from principal component factor analysis on *ACINDEP*, *BODINDEP* and *DUALITY*.

RETOWN = Retained ownership based on the absolute value of the natural logarithm of $|\alpha + \text{Ln}\ (1 - \alpha)|$, where $\alpha = (N - Np - Ns)/N$ (and where N is the number of shares outstanding after completing the IPO; Np is the number of primary shares offered via the IPO; and Ns is the number of shares offered on a secondary basis via the IPO).

GNEWS = Indicator variable taking on the value of 1 if actual earnings in the IPO year/period are greater than prior period earnings (i.e., "good news" based on a random walk model), 0 otherwise.

HISTORY = Indicator variable taking on the value of 1 if earnings history is provided in the IPO for at least 5 periods, 0 otherwise.

HORIZON = Number of months from the end of the latest interim results period included in the prospectus to the IPO's fiscal year end (i.e., forecast horizon).

UW-PRESTIGE = Indicator variable taking on the value of 1 for IPOs with a prestigious underwriter, 0 otherwise (see also footnote 5).

AUDITOR = Indicator variable taking on the value of 1 if the firm is audited by a Big 4 or Big 6 firm, 0 otherwise.

COMPENSATION = Indicator variable taking on the value of 1 if the firm has a bonus or option plan in place at the IPO date, 0 otherwise.

SIZE = Natural logarithm of lagged total assets.

TOTACCRUALS = Earnings for the IPO year (t) – cash flow from operations for the IPO year, scaled by average total assets.

$\Delta SALES$ = Revenue in t – revenue in $t-1$, scaled by average total assets.

PPE = Property, plant and equipment in t, scaled by average total assets.

SALESGROWTH = Revenue in $t+1$ – revenue in t, scaled by revenue in t.

DACCRUALS = Estimated discretionary accruals for the IPO year, scaled by average total assets.[13]

(EBDA–FCST) = Earnings before discretionary accruals minus forecasted earnings, divided by the absolute value of forecasted earnings for the IPO year.

POSITIVE = Indicator variable taking on the value of 1 if (*EBDA–FCST*) is positive, 0 otherwise.

LEVERAGE = Total debt at the end of the IPO year divided by shareholders' equity at the end of the IPO year.

LOSS = Indicator variable taking on the value of 1 if net income for the IPO year is negative, 0 otherwise.

BTM = Book value of equity at the end of the IPO year divided by market value of equity at the end of the IPO year.

LEADCFLOW = Industry adjusted cash flow from operations for the year following the IPO year, scaled by average total assets.

CFLOW = Cash flow from operations for the IPO year, scaled by average total assets

NORMACCRUALS = *TOTACCRUALS* for the IPO year – estimated discretionary accruals for the IPO year, scaled by average total assets.

FCSTMISS = Indicator variable taking on the value of 1 if (*EBDA–FCST*) is negative, 0 otherwise (i.e., firms that would miss their forecast before taking discretionary accruals into account).

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13 More specifically, for *DACCRUALS*, estimated discretionary accruals represent the performance-matched discretionary accrual; calculated as the difference between the cross-sectional Jones model discretionary accrual and the corresponding cross-sectional Jones model discretionary accrual for the performance-matched firm.

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