

THE ACCURACY OF EARNINGS FORECAST AND POST-IPO EARNINGS MANAGEMENT

Yanthi Hutagaol
Dezie L. Warganegara
Christofer Wibisono

School of Accounting dan Finance BINUS Business School - BINUS University
Jl. Hang Lekir I No. 6, Jakarta, 10270.

Abstract

Prior studies showed that before IPO, many companies conducted earnings management in order to attract potential investors through impressive earnings figures. This study aimed to investigate the tendency of earnings management practice post - IPO. This practice of earnings management was motivated to preserve managers' reputation in achieving their earnings forecasts. Using a total of 165 IPOs in IDX during year 2000-2010, this study employed descriptive analyses to identify the earnings management differences within the sample. A cross-section analysis was conducted to test the difference of earnings management indicator among the forecasters. Then, controlling for audit quality, ownership, firm size, and firm leverage, a regression analysis was performed to test the impact of earnings forecasts accuracy on the earnings management. The result of this research showed that there was an indication that the forecasters conducted more earnings management than the non-forecasters. The study found that forecast accuracy was significantly related to managers' behavior to manage post-IPO earnings. Further analysis showed that optimistic forecasters tended to engage more in more earning management than conservative forecasters. The cross section analysis confirmed that optimistic earnings forecast strengthened the relationship of forecast accuracy and post-IPO earnings management, while high audit quality failed to weaken it.

Key words: *earnings forecast, earnings management, initial public offering*

IPO is an event when a company for the first time sells or offers its share for public in stock market. One of requirements of company that is going to register for IPO is to publish prospectus. The document is aimed to provide comprehensive company information to potential investors. In this way, it is expected to reduce the information asymmetry between company and investors, as well as, among investors.

In initial offering prospectus, management discloses mandatory and voluntary information. The prospectus mandatory disclosure in Indonesia market includes, among others, company profile, IPO arrangements, audited financial statements for a minimum the last three years. Moreover, management is also encouraged to voluntarily disclose other materially information that could help investors to make informed pricing

Korespondensi dengan Penulis:

Yanthi Hutagaol: Telp. +62 21 720 2222; Fax. +62 21 720 5555

E-mail: yhutagaol@binus.edu

decision. One of common voluntary disclosure is earnings forecast. Usually, management issues earnings forecast for the end of IPO year.

Earnings management is a direct management intervention in finance report process which is aimed to gain profit or certain benefits, either for manager or for company (Schipper, 1989). According to Healy & Wahlen (1999), the tendency of earnings management happens when the management uses their judgment in finance report and transaction procedures, which is aimed to give contractual influence and to trick other party to take decision. Scott (2000) explains that the earnings manipulation motivation happens because it is eventually done for bonus, contractual motivation, politic motivation, taxation motivation, the assigned new CEO, main stock offer, and communication with investors.

Regarding earnings management in many IPO studies, there is an argument that explains the motivation of management to commit to earnings management prior to IPO. The argument is that pre-IPO earnings management is used by managers to increase pre-IPO earnings. Then, pre-IPO earnings are used as a base for pricing the IPOs. Thus, it will settle the IPO price in a higher level. The empirical evidence in Indonesia for this hypothesis is mixed (e.g., Warganegara & Indriastari, 2009).

Earnings Forecast in IPO

In Indonesian market setting, management earnings forecast is a voluntary disclosure. From the observation, it is very rare company disclose its earnings forecasts in the annual reports. Meanwhile, it is common to find earnings forecasts in the prospectus when company seeks additional funds from the market through IPO or SEOs (From 167 IPOs in 2000-2010, there were 96 IPOs disclosing earnings forecasts in the offering prospectuses).

Prior studies indicate that there are several motives for voluntary disclosure. Healy & Wahlen

(1999) argue that company disclose additional information to public, in order to avoid wrong firm valuation and enhance the potential investor interest in the company, therefore it may increase the company's share liquidity. Therefore, usually managers are more likely to issue voluntary disclosure, for instance, earnings forecast, when firms access the capital market, such as in the IPO or SEO markets (Graham, et al, 2005). Meanwhile, Lennox, & Park (2006) argue that management voluntary disclosure is aimed to reduce information asymmetry either between managers and investors or among investors. Two motives above fit to IPO market, which is perceived as a high information asymmetry market. Hence, in IPO market earnings forecast disclosure helps to minimize the gap exist between managers and investors, which could result in lower companies' cost of capital (e.g., Botosan, 1997).

There have been many studies examining the role of earnings forecast on the IPO valuation. Jog & McConomy (2003) investigate the role of earnings forecast as a signal in IPO valuation process. They argue that the inclusion of an earnings forecast is to indicate that, on average, the forecasters have superior future cash flow prospects relatively to non-forecasters and will be viewed by the market as a favorable signal. Using Canadian data, they find that the forecasters have favorable and noticeable impact on the degree of underpricing. In most IPO studies, the degree of underpricing is a reflection of market information asymmetry. Thus, the result of Jog & McConomy (2003) implies that earnings forecasts disclosure reduces IPO market information asymmetry. Using market to book ratio at day 1 as a relative IPO value, Keasey & McGuiness (2008) find that forecasters are valued higher than non-forecasters. The favorable effect of earnings forecast continued to post-IPO return performance for the forecasters. In more recent study, Hartnett (2010) investigates the relationship between forecasting and firm value and finds that, to some degree, there is a positive rela-

The Accuracy of Earnings Forecast and Post-IPO Earnings Management

Yanthi Hutagaol, Dezie L. Warganegara, & Christofer Wibisono

tionship between the earnings forecasts and the firm value.

Evidence show that IPO earnings forecast accuracy varies among the countries (e.g., Lee, et al, 1993; Firth, 1998). Hartnett & Romcke (2000) summarize nine IPO studies and find that the forecast accuracy varies across firm age, size, forecast interval, industry, leverage, agent quality, and other factors. Jaggi, et al (2006) classify the relative forecast accuracy as pessimistic and optimistic forecasts. When the forecasted earnings are higher than the actual ones, the relative accuracy is classified as optimistic forecast, while the forecasted earnings are lower than the actual ones is classified as pessimistic forecast. In relation to the IPO performance, Gounopoulos (2011) also concludes that firms with negative earnings forecast (pessimistic) are associated with low level of initial returns, while optimistic management earning forecast for an IPO is associated with high initial returns. In the longer period, Jelic, et al. (2001) find that optimistic forecasters tend to underperform the market during the first 12 months after listing. Kao, et al. (2009) report that in Chinese IPO market, overoptimistic forecast have lower first day returns and the worst post-IPO stock performance. These findings imply that failure to meet earnings forecast could affect the investors' pricing decision. Furthermore, Cormier & Martinez (2006) assert that the forecast also serves as benchmark against actual financial results when investors evaluate the firm's earnings performance, thus creating an implicit contract between the managers and investors. Hence, investors could use the earnings forecast accuracy in evaluating the managers' performance.

Prior studies show that managers are aware that forecast accuracy could affect their credibility. They put efforts to achieve the earnings target. Using Taiwan data, Jaggi, et al (2006) examines the effect of the forecasts to managers' behavior to anticipate the forecast accuracy. They use the relative forecast errors to make a differentia-

tion between the optimistic and the pessimistic forecasters, then, observe the manager behavior in earnings management. They find that the IPO earnings forecast is more accurate after it becomes mandatory in Taiwanese market. However, further analysis shows that the low errors in the mandatory environment in Taiwan are a result of increasing earning management practices to meet the earnings forecasts.

Kaszniak (1999) argues that minimizing forecast bias could be achieved either by revising earning forecast or by manipulating reported profit using discretionary accrual. A manager tends to use alternative to decrease the forecast bias, particularly optimistic forecast, by adjusting reported profit using discretionary accrual, instead of revising preliminary earning forecast. In case of optimistic forecast, Kaszniak (1999) states that downward revision is avoided because it can send negative signal to the market, which can result negative toward manager credibility. While in conservative (pessimistic) forecast, a manager adjust earnings forecast upward or adjust reported profit downward and create supply "cookie jar" to be used in the next period. The choices between forecast revisions and earning management will be made; it depends on situation and purpose accomplishment under this circumstances.

Earnings Management and IPO

Healy & Wahlen (1999) suggest that earning management has a wide understanding because there are three important aspects in it. First, is it is seen that there will be many reasons or justifications emerged by manager to influence various reasons to predict any events in the future, such as machine usage time, long term asset salvage value, tax delay or loss as a result of bad debt. The second point is that profit management is used to describe something unreal to stock holders (to mislead stock holders) or some levels of stock holders about the actual economic activities. This

could happen if some stock holders do not have capability of revealing or some do not care about profit management practice. The third point is justification done by manager to use profit management is implied not only benefits but also cost. It means profit management has two direct implications, which are cost and benefit. Healy & Wahlen (1999) divide motivation which is based the profit management into three groups. The first is stock market motivation which is shown with stock *return*. Secondly, it is contract motivation in debt covenant or management compensation covenant. Lastly, it is motivated by political cost avoidance.

There have been many studies investigating the earnings management conducted prior to IPO. Li, et al (2006) argue that earnings management is a specific instrument used by managers in order to price the IPO such to get IPO proceeds target. Several empirical studies find evidence that several years before IPO, companies did manage their earnings, so that they were able to set "rational" offer prices at IPO (e.g., Teoh, Welch, & Wong, 1998; Roosenboom, van der Goot, Mertens; 2003). However, not all similar studies find the same results. Using IPO Indonesian data, there are some conflicting results. While Rahman & Hutagaol (2008) find that firms manage their earnings through discretionary accrual prior to IPO, Warganegara & Indriastari (2009) do not find enough evidence to support the former. They argue that the demand for higher quality of financial reports from public investors in Indonesia somehow has pushed companies to improve their reporting quality. Using a different method in detecting the managers' behavior managing their earnings, Oktorina & Hutagaol (2009) find that Indonesian manufacturing companies tend to manage their earnings through manipulation of real activities.

Kao, et al. (2009) investigate the impact of pricing regulation in Chinese market and the managers' opportunistic behavior. They find that pricing

regulations, somehow, has reduced the optimism in earnings forecasts. However, the regulations have induced companies to inflate pre-IPO earnings and, in turn, affect the post-IPO performance negatively.

Prior studies discussed above observe managers' opportunistic behavior prior to IPO. Kasznik (1999) examines whether managers also manipulate their earnings after the IPO. His and other studies (Magnan & Cormier, 1997 and Gramlich & Sorensen, 2004) find the robust evidence for managers who release earnings forecast at IPO. Cormier & Martinez (2006) explain that managers of forecaster IPOs have incentives to manage their earnings after the IPO, particularly towards the end of IPO year in order to avoid a negative earnings surprise. Another motive to explain the post-IPO earnings management is that managers try to protect their reputation as credible information producer. With this elucidation, the earnings are managed so that the forecast accuracy is sufficiently low.

Beside the main motivation of earnings management is to protect their reputation, the discretionary accruals – as an earnings management indicator – are also influenced by other factors, such as audit quality, ownership structure, firm size, and firm's leverage level.

Krishnan (2003) argues that high quality auditors are more likely to identify dubious accounting practices and report irregularities than low quality auditors. Confirming prior study by Becker, et al. (1998), he finds that Big 6 clients show lower discretionary accruals than non-Big 6 clients.

The likelihood of managers practicing earnings management is also influenced by how the firm governed. Klein (2002) finds that the existence of independent audit committee and board of committee is negatively related to abnormal accruals. Using Chinese data, Liu & Lu (2007) find systematic evidence demonstrating the positive

The Accuracy of Earnings Forecast and Post-IPO Earnings Management

Yanthi Hutagaol, Dezie L. Warganegara, & Christofer Wibisono

impact of corporate governance level and earnings managements.

Siregar & Utama (2008) argue that larger firms are more easily scrutinized by investors or regulators than smaller firms; therefore it is expected to engage in less opportunistic earnings management than the latter. Teoh, et al (1998) find that larger firms tend to have less discretionary accruals than their counterparts.

Watts & Zimmerman (1990) states that managers from high leveraged-firms tend to choose accounting procedures that shift earnings that supposedly reported in future period to the current period. This is to show to the debt holders (and shareholders) that firms have a capability to pay interests and the debts. However, Cormier & Martinez (2006) argue that in an IPO context, the higher level of leverage is associated to smaller equity financing, therefore there is less needs for managers to manage investors' perceptions with discretionary accruals. This study uses leverage as a control variable to earnings management.

Cormier & Martinez (2006) argue that earnings management in IPO could exist after the IPOs. In line with it, this study is purported to examine whether earnings forecast in IPO prospectuses induce earnings management after IPO. The argument of post-IPO earnings management is the management motive to achieve the earnings target disclosed in the IPO prospectuses. Disclosing earnings forecast in prospectus could be seen as management's promise to shareholders that company will provide a certain future income at the end of IPO year. In order to protect their reputation, managers put their best efforts to meet the target. Closing to the end of IPO year, managers would know whether earnings forecast could be achieved or not. If it is likely not achieved (aggressive forecast), there is sufficient motive to manage the earnings upwardly. On the other hand, if actual earning is likely to exceed the target (conservative forecast), managers still have a motive

to manage earnings downwardly. Based on the authors' knowledge, there is no study, using Indonesia data, investigating the post-IPO earnings management. Therefore, this study contributes new insight regarding the management behavior on managing their earnings after IPO.

This study finds that there is no significant evidence to support that there is a difference earnings management practices between the forecasters and non forecasters. However, a significant difference is found among forecasters. The results shows that optimistic forecasters tend to engage more in more earning management through discretionary accrual than conservative forecasters. This study also finds that the presence of high audit quality does not deter managers' behavior in managing post-IPO earnings through discretionary accruals.

This paper is structured as follow. A review of prior literature in earnings forecast and earnings management in IPO will be presented and is followed by hypotheses development. The research design presents the sample and data analysis used in this study. Next is the findings and discussion section, then the paper is closed by a conclusion section.

HYPOTHESIS DEVELOPMENT

This research argues that earnings management in IPO could happen prior to and/or after the IPO. The managers' motive to conduct earnings management prior to the IPO is to influence pre-IPO earnings, achieve favorable P/E ratio, and manage the targeted IPO offer price. Meanwhile, post-IPO earnings management is purported to increase forecast accuracy (lower forecast bias) at the end of IPO year. This is provoked by managers' motive to maintain their credibility in voluntary disclosure, in particular earnings forecast. The timeline of after-IPO earnings management could be drawn as presented in Figure 1 below.

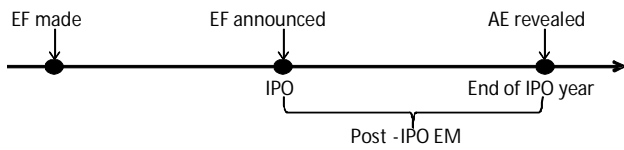


Figure 1. After-IPO Earnings Management Timeline

Since the motivation of post-IPO is to increase forecast accuracy, it is expected that forecasters are more likely to manage their post-IPO earnings than the non-forecaster. Thus, the first hypothesis could be stated as follow,

H₁: The forecasters tend to manage their post-IPO earnings compared to the non-forecasters

Among the forecasters, this research argues that optimistic forecasters will have higher motivation to manipulate their earnings since they have higher probability that the IPO earnings forecast cannot be achieved at the end of IPO year. Therefore, it is expected that the optimistic forecasters are more likely to engage in the earnings management practice than conservative forecasters. Furthermore, the relationship between forecast accuracy and earnings management is strengthen in optimistic forecast cases.

H₂: Optimistic forecasters tend to manage their post-IPO earnings compared to conservative forecasters and strengthen the forecast accuracy and post-IPO earnings management relationship.

Prior research shows that audit quality influences the existence and magnitude of earnings management indicator. This research chooses audit quality as a moderating variable in the forecast accuracy and earnings management relationship. The presence of high audit quality is expected to weaken the forecast accuracy-earnings management relationship.

H₃: High audit quality will weaken the relationship between forecast accuracy and post-IPO earnings management

Other control variables used in this study are ownership structure, firm size, and leverage which are expected to have significant relationship with earnings management practices.

METHOD

This study is an explanatory study aiming to explain the relationship between research variables. The scope of the study is limited to IPO firms that went public in IDX during year 2000-2010.

Table 1. Percentage of Forecaster Companies per Year

Year	IPO Companies	Final sample	Forecaster
2000	17	17	13
2001	32	31	27
2002	15	15	15
2003	6	6	4
2004	12	11	9
2005	7	7	6
2006	8	8	6
2007	23	23	10
2008	15	15	2
2009	12	12	2
2010	20	20	2

A total of 167 firms went public during 2000-2010 (see table 1). However, only 165 IPO prospectuses can be collected and retrieved in which 96 are forecasters. The table shows that in the later years, less firms disclosing earnings forecasts at their IPOs. An explanation to the fact is that starting in 2007, there is a trend of pricing the IPO using the book building method in Indonesia market. This method allows the issuers to announce their offer price in a price range, and then decide its final offer price after they conduct the road shows, in which the issuers and underwriters are

The Accuracy of Earnings Forecast and Post-IPO Earnings Management

Yanthi Hutagaol, Dezie L. Warganegara, & Christofer Wibisono

able to gather information from potential institutional investors regarding the demand of their IPO shares.

Sample IPOs are classified as forecaster or non-forecaster, based on the existence of earnings forecasts in the IPO prospectuses. Then, based on end of IPO year forecast bias, the forecaster subsample is divided into optimistic and conservative forecasters. Optimistic forecasters are ones producing positive forecast bias (earnings forecast is higher than post-IPO actual earnings), while conservative forecasters are ones producing negative forecast bias (earnings forecast is lower than post-IPO actual earnings).

There are several research variables used to test the research hypothesis. First variable is earnings forecast accuracy (*EFA*). Forecast accuracy is defined as the deviation of earnings forecasts from actual post-IPO earnings. It is calculated using the equation (1) below,

$$EFA_i = \left| \frac{EF_i - AE_i}{AE_i} \right| \dots \dots \dots (1)$$

Where, *EFA_i* is earnings forecast accuracy of IPO_{*i*}, *EF_i* is earnings forecast of IPO_{*i*} disclosed in the IPO prospectus, *AE_i* is post-IPO actual earnings of IPO_{*i*} at the end of IPO years. To test the second research hypothesis, this research uses Forecast bias (*FB*), which is the relative form of *EFA*. IPO with positive *FB* is categorized as optimistic forecaster, while ones with negative *FB* is categorized as conservative forecaster.

Following Cormier & Martinez (2006), Jones (1991) modified accrual model is used to proxy the indicator of managers' opportunistic behavior in earnings management. It excludes negative earnings dummy used in Cormier & Martinez (2006) since less than 10% of IPO sample reported a loss after IPO. The equation (2) expresses the Total Accrual (TA) model used.

$$TA_{it} = \alpha + \alpha_1 \Delta Sales_{it} + \alpha_2 CF_{it-1} + \alpha_3 PPE_{it} + \varepsilon_i \dots \dots \dots (2)$$

Where, *TA_{it}* is total accrual, measured by the difference between sales and net income (earnings) at the end of IPO year. "*Sales_{it}* is change in Sales at the end of IPO year. *CF_{it-1}* is lagged cash flow from operation. *PPE_{it}* is level of property, plant and equipment at the end of IPO year. The TA model above will be calculated for all research samples. The residual (\hat{a}_i) of equation (2) is used as a proxy for discretionary accrual (DA) – a measure for earnings management.

The t-tests are conducted to test the difference mean of DA between the forecasters and non-forecasters, optimistic and conservative forecasters.

The impact of forecast accuracy on managers' behavior in earnings management is examined using a multivariate model. Several control variables are included in the model in order to control their significant impacts on the earnings management. The research model used is expressed in equation (3) below.

$$DA_{it} = \beta_0 + \beta_1 EFA_{it} + \beta_2 DOpt_{it} + \beta_3 EFA_{it} * DOpt_{it} + \beta_4 DAud_{it} + \beta_5 EFA_{it} * DAud_{it} + \beta_6 Own_{it} + \beta_7 Size_{it} + \beta_8 Lev_{it} \dots \dots \dots (3)$$

DA_{it} is discretionary accruals of IPO_{*i*} at the end of IPO year. *EFA_{it}* is forecast accuracy of IPO_{*i*} at the end of IPO year. *DOpt_{it}* is a dummy variable for optimistic forecasters (1 for positive forecast bias (FB) and 0 otherwise). *DAud_{it}* is a dummy variable for audit quality (1 for IPO sample audited by Big 4, and 0 otherwise). *Own_{it}* is percentage of IPO_{*i*}'s shares sold to public at IPO. *Size_{it}* is normal log of total asset of IPO_{*i*} at the end of IPO year.

FINDINGS

Forecast Accuracy

As shown in Table 1, about 58.2% of sample is forecasters. At the end of IPO year, the forecast

accuracy and bias are calculated. The result is shown in Table 2 below.

Table 2. Forecast Accuracy (Bias) of IPO Sample

Sample	N	Average Forecast Accuracy (Bias)
All forecasters	96	0.4905 (0.2665)
Optimistic forecasters	63	0.5406 (0.5406)
Conservative forecasters	33	0.3919 (-0.3919)

Table 2 above shows that 64 forecasters are optimistic (forecasters whose earnings forecasters cannot be achieved at the end of IPO year with average forecast upward bias 54.06%. It means that around two thirds of forecasters have forecasted their earnings at IPI higher than they would achieve months after forecasted made. Around one third of forecasters are conservative when they forecasted their earnings at the IPO with the accuracy around 39.19%. Since the accuracy is measured by dispersion of forecasted earnings from actual earnings, the result should be understood as the lower the measure, the more accurate is the forecasts. The result shows that conservative forecaster is more accurate than optimistic forecaster.

If it is assumed that managers always try to protect their reputation as credible information produces, they would have manage their earnings towards the end of year, so they could have lower forecast bias (higher accuracy). However, the result above does not provide an indication that earnings management conducted, if any, is to serve the managers' reputation protection.

Discretionary Accrual

As discussed above, this research uses discretionary accrual as an indicator of managers' opportunistic behavior in managing their earnings

after IPO. Mathematically, discretionary accrual is the standardized residual of TA model (equation 2). For all IPO sample, the regression equation for TA model is:

$$TA_{it} = 20.70 + 0.090 \Delta Sales_{it} - 0.714 CF_{it-1} + 0.069 PPE_{it}$$

(0.874) (0.027) (0.024) (0.026)

The average of model residuals for all IPO sample is approximately zero. From 165 IPO sample, 125 IPO produced negative discretionary accruals and 40 IPO produced positive discretionary accruals. This result indicates that more than 75% of IPO sample tried to manage their earnings downward. This is quite surprising as the forecast accuracy shows that more than two thirds of samples are optimistic forecasters, who, reasonably, have a motive to manage their earnings upward. However, when the sample is grouped on the forecasters and the forecast accuracy (Table 3), the result is more explainable.

Table 3. Average Discretionary Accrual of IPO Samples

Sample	N	Average of Discretionary Accrual
All sample	165	0.000
Forecasters	96	0.023 ¹
Non-forecasters	69	-0.032 ²
Optimistic forecasters	63	0.033 ²
Conservative forecasters	33	-0.135 ³

¹ The t-test results of DA means for forecasters and non-forecasters show that both DA means are not different to zero at $\alpha = 5\%$. The result of two sample t-test for mean difference confirms that the difference means between forecasters and non-forecasters is not different to zero at $\alpha = 5\%$.

² The t-test results of DA means for Optimistic and Conservative forecasters show that both DA means are different to zero at $\alpha = 10\%$. The result two sample t-test for mean difference confirms that the difference means between Optimistic and Conservative forecaster is slightly significant at $\alpha = 10\%$.

Table 3 indicates that there is a different motive of earnings management between the forecasters and non-forecasters. The forecasters have an average of positive DA, while non-forecasters have an average negative DA. This could imply

The Accuracy of Earnings Forecast and Post-IPO Earnings Management

Yanthi Hutagaol, Dezie L. Warganegara, & Christofer Wibisono

that, on average, forecasters have a motive to manage their earnings upward after IPO. Meanwhile, the non-forecasters appear to manage their earnings downwardly. However, the statistical test to test the means difference between forecasters and non-forecasters fails to reject the null hypothesis. It can be concluded that, although an apparent difference in discretionary accrual, the test result confirms that the difference is statistically insignificant. Therefore, there is not enough evidence to support that forecasters are more likely to engage in post-IPO earnings management practices. This finding does not confirm prior findings found by Cormier & Martinez (2006).

Table 3 also reports the average of discretionary accrual for optimistic and conservative forecasters. This research posits that to protect their reputation, managers of optimistic forecasters tend to manage their post-IPO earnings more than conservative forecasters. Table 3 shows that, on average, optimistic forecasters have a positive DA that indicates a motive of increasing income, while conservative forecasters, on average, have a negative DA that indicated a motive of decreasing income. This fact is in line with theoretical framework developed in this research. The statistical tests for means of both sub-samples of forecasters cannot confirm significant earnings management practice. However, the test for mean difference between both sub-samples is significant at

$\alpha = 10\%$. It implies that optimistic forecasters manage their post-IPO earnings differently to conservative forecasters. Based on the sign of DA, optimistic forecasters tend to manage their earnings upwardly, while conservative forecasters manage their downwardly.

The inference of descriptive statistics above could be used as an indication of the managers' behavior in earnings management upon their forecast accuracy. To test the impact of the forecast accuracy on the managers' behavior managing their post-IPO earnings, a more through analysis is conducted using a research model presented in previous section (eq.3). A cross-section analysis allows this study to include all considerable variables to interact in a model.

Table 4 below presents the descriptive statistics of research variables of forecasters sub-sample used in the research model. As mentioned earlier, on average the forecasters show an average positive DA. The median shows a negative DA showing that more than half forecasters manage their earnings downwardly. The earnings forecast accuracy shows an average of absolute bias of 50.7%. The table also shows that more than half forecasters are optimistic forecasters. It also shows that majority of forecasters are audited by non-Big 4 auditor. On average, the public owns around 24.7% forecasters shares at IPO. It indicates that public is not the majority shareholders. The fore-

Table 4. Descriptive Statistics of Research Variables

Variable	Mean	Median	Standard Deviasi	Min.	Max.
DA	0.023	-0.083	0.175	-0.215	0.835
EFA	0.507	0.232	0.808	0.002	4.293
DposFB	-	1.000	0.473	0.000	1.000
EFA*DposFB	0.373	0.141	0.693	0.000	4.129
DAud	-	0.000	0.492	0.000	1.000
EFA*DAud	0.196	0.000	0.610	0.000	4.129
Public	0.247	0.245	0.109	0.070	0.500
Size	25.971	25.753	1.498	23.076	30.293
Lev	0.432	0.399	0.260	0.002	0.950

casters show a vary leverage profile. It ranges from 0.2% (almost no debt) to 95% (heavily levered firm) leverage.

Next is the discussion of the cross section analysis. Table 5 below shows the regression analysis result. This study conducts several analyses to examine the impact of forecast accuracy and the post-IPO earnings management practice. Firstly, a shorter model is analyzed. It includes only the forecast accuracy (EFA) and the dummy variables for Optimistic forecasters and audit quality. The result is presented in column 2.

Table 5. Regression Analysis Results

Variable	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Constant	-0.031 (0.36)	-0.977*** (0.01)	-0.975*** (0.00)
EFA	0.062*** (0.00)	0.060*** (0.01)	0.073** (0.04)
DOpt	0.081** (0.03)	0.083** (0.02)	0.045 (0.26)
EFA*DOpt	-	-	0.090* (0.07)
DAud	0.082** (0.02)	0.037 (0.29)	-0.004 (0.92)
EFA*DAud	-	-	0.095** (0.05)
Own	-	-0.149 (0.33)	-0.149 (0.36)
Size	-	0.041*** (0.00)	0.040*** (0.00)
Lev	-	-0.120 (0.09)	-0.104 (0.14)
Adj R-square	0.168	0.287	0.327
F-stat	5.896*** (0.00)	5.645*** (0.00)	4.970*** (0.00)

Note: * significant at $\alpha=10\%$; **significant at $\alpha=5\%$;
*** significant at $\alpha=1\%$

The result shows that the short model is valid (F-stat = 5.896, p-value = 0.00). Simultaneously, forecast accuracy and dummy variables optimistic and audit quality explain 16.8% of discretionary accrual variation. The model shows that forecast accuracy significantly influenced the tendency of managers to manage post-IPO earnings. The coefficient takes a positive sign implying that the less

accurate the forecast (the more deviate forecast from actual post-IPO earnings, in absolute term) the more discretionary accrual conducted to manage post-IPO earnings. This result is in line with findings from Kasznik (1999) and Cormier & Martinez (2006).

Results in column 2 also show that two dummy variables of optimistic forecast and audit quality are significantly related to the discretionary accrual. Optimistic forecasters show a positive coefficient implying that there is tendency of they manage their post-IPO earnings upwardly to meet the forecasts made at the IPO. The coefficient for audit quality dummy takes a positive value, meaning that more discretionary accrual detected from higher quality financial reports as a result of Big 4 auditing process. This result is not of expected. The short model analysis concludes that all expected result is proven that forecast accuracy has a significant impact on the managers' opportunistic behavior to manage post-IPO earnings. Optimistic forecasters tend to engage in earnings management upwardly. However, the presence of high audit quality does not reduce the managers' engagement in post-IPO earnings management.

Column 3 of Table 5 above reports the extended model by inclusion of control variables, ownership structure, firm size, and firm leverage level. After controlling for the effects of those variables, the constant becomes significant. It shows that on average the forecasters do manage their earnings after the IPOs. The negative sign of the constant describes that on average, the motive of post-IPO earnings management is more toward the decreasing income. The Variables EFA and DOpt retains their signs and significance. Variable DAud retains its sign, but appears to be insignificant.

The result in column 3 shows that variable Own takes a negative coefficient, however, it comes insignificantly. The result is in line with Cormier & Martinez (2006). This insignificant could be explained as discussed above that public is not

The Accuracy of Earnings Forecast and Post-IPO Earnings Management

Yanthi Hutagaol, Dezie L. Warganegara, & Christofer Wibisono

the majority shareholders of forecaster firms. Therefore, the power of public to direct and monitor managers' behavior in discretionary accruals is limited. Variable Size shows a positive and significant coefficient. This implies that the bigger forecasters tend to engage more in discretionary accruals. This is not as expected since this study posits that because of the media coverage, the big firms tend to avoid in earnings management practices through discretionary accruals. The result implies that big forecasters are more engaged in managing post-IPO earnings. One possible explanation is that big firms are more concerned of protecting their reputation; therefore they are willing to practice earnings management through discretionary accruals. Variable Lev appears to be insignificant. Since the forecasters firms has a wide range of leverage, its impact on how managers' engagement in discretionary accruals are lacked of significant directions.

DISCUSSION

So far, the main hypothesis: forecast accuracy influences managers' opportunistic behavior in managing their post-IPO earnings is supported by the result of short and extended models. Further analysis is carried out to test the second hypothesis. The full model allows this study to investigate the strength of the forecast accuracy-earnings management relationship in the presence of nature of forecast bias and audit quality. The result of the full model is presented in the last column of Table 5.

The result shows that, on average, the forecasters conducted post-IPO earnings management (Coefficient of Constant is significant at p -value = 0.00). Furthermore, negative coefficient shows that forecasters manage their post-IPO earnings downwardly. Forecast accuracy shows its significant impact on discretionary accruals with a positive direction. It implies that the less accurate the fore-

cast will force managers to conduct discretionary accrual to manage post-IPO earnings upwardly. In this analysis, that relationship are moderated by the nature of forecast bias and audit quality.

The interactive term of forecast accuracy and optimistic forecaster ($EFA*DOpt$) shows a positive and significant coefficient. It means that the positive relationship of forecast accuracy and earnings management is strengthened in case of optimistic forecasters. This result is in line with Cormier & Martinez (2006). This result provides a support for the second hypothesis.

In the full model analysis (column 4), the result shows similar inferences with the extended model (column 3). The interactive terms ($EFA*DOpt$ and $EFA*DAud$) show significant results. The $EFA*DOpt$ coefficient is positive and significant, implying that the optimist managers tend to manage their earnings upward even more, compared to the conservative managers. The dummy variable, $DAud$, shows a negative coefficient, which indicates that, the earnings management of forecasters audited by Big4 auditors tend to be less. However the result of interactive term is of forecast accuracy and audit quality ($EFA*DAud$) shows a positive and significant coefficient. It implies that the relationship between forecast accuracy and earnings management is strengthen, rather than weaken, by audit quality. This is not as expected. The finding regarding the high audit quality, to some degree, has raised a question of the role of Big4 in conducting auditing process in Indonesia.

Similar to the extended model analysis, the full model analysis reports that from control variables, only firm size is significantly related to managers' action in post-IPO discretionary accrual. Ownership structure and firm's leverage appear to be insignificantly related to earnings management.

CONCLUSION AND SUGGESTION

Prior to go public, managers attempt many ways to attract potential investors to buy firms' shares at the IPO. One way used in IDX is to issue earnings forecasts in the IPO prospectus. This forecast is aimed to guide the potential investors in pricing the IPO. However, this voluntary disclosure becomes a target for managers to achieve it at the end of IPO year. In order to protect their reputation, managers put their best efforts to achieve the earnings target. Months prior to the end of year, managers would know whether the earnings target would be achieved or not. Therefore, there is an incentive to manage the post-IPO earnings to meet the target.

The study results conclude that there is no enough evidence to prove that I IPO firms in IDX during 2000-2010 conducting post-IPO earnings management through discretionary accruals. Although there is an indication that forecasters are engaged more in discretionary accruals compared to non-forecasters, but the difference is not significant. However, this study finds that there is a slightly significant difference among forecasters. The optimistic forecasters tend to engage more in managing their post-IPO earnings management upwardly. This study also finds that the forecast accuracy does have a significant impact on influencing managers' behavior to manage their post-IPO earnings through discretionary accruals. The less accurate the forecast, the more managers engaged in earnings management practice. This relationship is strengthened in optimistic forecast cases, but weakened in the presence of high audit quality. This is a surprising result and it raises an issue of the Big 4 role in audit business in Indonesia.

Firm size, is the only control variables that is significantly related to the earnings management. Ownership structure and firm's leverage appears to be insignificantly related to earnings management practices in Indonesia. This finding opens further avenue to investigate the corporate

governance issue in detecting earnings management through discretionary accruals.

REFERENCES

- Becker, C. L., DeFond, M. L., Jiambalvo, J., & Subramanyam, K. R. 1998. The Effect of Audit Quality on Earnings Management. *Contemporary Accounting Research*, 15: 1-24.
- Bikki J., Chin, C.L., Lin, H.W., & Lee, P.C. 2006. Earnings Forecast Disclosure Regulation and Earnings Management: Evidence from Taiwan IPO Firms. *Review of Quantitative Finance Accounting*, 26: 275-299.
- Botosan, C. 1997. Disclosure Level on the Cost of Equity Capital. *Accounting Review*, 72: 323-349.
- Chen, G., Firth, M., & Krishnan, G. 2001. Earnings Forecast Errors in IPO Prospectuses and Their Associations with Initial Stock Returns. *Journal of Multinational Financial Management*, 11(2): 225-240.
- Cormier, D. & Martinez, I. 2006. The Association between Management Earnings Forecasts, Earnings Management, and Stock Market Valuation: Evidence from French IPOs". *The International Journal of Accounting*, 41: 209-236.
- Graham, J., Harvey, C. R., & Rajgopal, S. 2005. The Economic Implications of Corporate Financial Reporting. *Journal of Accounting and Economics*, 40: 3-73.
- Gramlich, J. & Sorensen, O. 2004. Voluntary Management Earnings Forecasts and Discretionary Accruals: Evidence from Danish IPOs. *European Accounting Review*, 13: 235-259.
- Gounopoulos, D. 2011. Associations between Management Forecast Accuracy and Pricing of IPOs in Athens Stock Exchange. *Multinational Finance Journal*, 15: 235-272.
- Hartnett, N. 2010. The Value Relevance of Earnings Forecast Disclosure: An Investigation of Forecast Attributes and Signaling in the Australian IPO Context. *Applied Financial Economics*, 20: 1819-1828.
- Hartnett, N. & Romcke, J. 2000. The Predictability of Management Forecast Error: A Study of Australian IPO Disclosure. *Multinational Finance Journal*, 4: 101-132.

The Accuracy of Earnings Forecast and Post-IPO Earnings Management

Yanthi Hutagaol, Dezie L. Warganegara, & Christofer Wibisono

- Healy, P.M., & Wahlen, J.M. 1999. A Review of the Earnings Management Literature and Its Implication for Standard Setting. *Accounting Horizon*, 3.
- Hirst, D.E., Koonce, L. & Venkataraman, S. 2007. How Disaggregation Enhances the Credibility of Management Earnings Forecasts. *Journal of Accounting Research*, 45.
- Jaggi, B., Chin, C., Lin, H., & Lee, P. 2006. Earnings Forecasts Disclosure Regulation and Earnings Management by IPO Firms. *Review of Quantitative Finance & Accounting*, 26: 275-299.
- Jelic, R., Saadouni, B., & Briston, R. 2001. Performance of Malaysian IPOs: Underwriters Reputation and Earnings Forecasts. *Pacific-Basin Finance Journal*, 9: 457-486.
- Jog, V. & McConomy, B. 2003. Voluntary Disclosure of Management Earnings Forecasts in IPO Prospectuses. *Journal of Business, Finance & Accounting*, 30(1)(2): 125-167.
- Jones, J. 1991. Earning Management during Import Relief Investigation. *Journal of Accounting Research*, 193-228.
- Kasznik, R. & Lev, B. 1995. To Warn or Not to Warn: Management Disclosures in the Face of an Earnings Surprise. *The Accounting Review*, 70(1): 113-134.
- Kasznik, R. 1999. On the Association between Voluntary Disclosure and Earnings Management. *Journal of Accounting Research*, 37(1): 57-81.
- Kao, J., Wu, D., & Yang, Z. 2009. Regulations, Earnings Management, and Post-IPO Performance: the Chinese Evidence. *Journal of Banking and Finance*, 33: 63-76.
- Keasey, K. & McGuinness, P. 2008. Firm Value and Its Relation to Equity Retention Levels, 18 Forecast Earnings Disclosure and Underpricing in Initial Public Offerings in Hong Kong. *International Business Review*, 17: 642-662.
- Krishnan, G.V. 2003. Audit Quality and the Pricing of Discretionary Accrual. *Auditing: A Journal of Practice & Theory*, 109-126.
- Klein, A. 2002. Audit Committee, Board of Directors Characteristics, and Earnings Management. *Journal of Accounting and Economics*, 33: 375-400.
- Kothari, S.P., Leone, A., & Wasley, C.E. 2005. *Performance Matched Discretionary Accruals Measures*. *Journal of Accounting and Economics*, 39: 163-197.
- Lennox, C. & Park, C. 2006. The Informativeness of Earnings and Management's Issuance of Earnings Forecasts. *Journal of Accounting and Economics*, 42: 439-458.
- Liu Q., & Lu, Z. 2007. Corporate Governance and Earnings Management in the Chinese listed Companies: A Tunneling Perspective. *Journal of Corporate Finance*, 13: 881-906.
- Magnan, M. & Cormier, D. 1997. The Impact of Forward-Looking Financial Data in IPOs on the Quality of Financial Reporting. *Journal of Financial Statement Analysis*, 6-17.
- Oktorina, M. & Hutagaol, Y. 2009. Analisis Arus Kas Kegiatan Operasi dalam Mendeteksi Manipulasi Aktivitas Riil dan Dampaknya terhadap Kinerja Pasar. *Jurnal Riset Akuntansi Indonesia*, 12(1): 1-14.
- Rahman, A. & Hutagaol, Y. 2008. Manajemen Laba melalui AkruaI dan Aktivitas Real pada Penawaran Perdana dan Hubungannya dengan Kinerja Jangka Panjang (Studi Empiris pada BEJ). *Jurnal Akuntansi dan Keuangan Indonesia*, 5(1): 1-29.
- Schipper, K. 1989. Commentary on Earnings Management. *Accounting Horizons*, 3(4): 91-102.
- Scott, W.R. 2000. *Earnings Management, Financial Accounting Theory*. Second Edition. Ontario: Prentice Hall Canada Inc.
- Siregar, V. & Utama, S. 2008. Type of Earnings Management and The Effect of Ownership Structure, Firm Size, and Corporate Governance Practices: Evidence from Indonesia. *The International Journal of Accounting*, 43(1): 1-27.
- Teoh, S. H., Welch, I., & Wong T.J. 1998. Earnings Management and the Long-run Market Performance of Initial Public Offerings. *Journal of Finance*, 53(December): 1935-1974.
- Warganegara, D.L. & Indriastari, I. 2009. Do Indonesian Firms Inflate Their Reported Earnings Prior to IPOs? *Journal of Financial Reporting & Accounting*, 7(2): 61-79.
- Watts, R., & Zimmerman, J. 1990. Positive Accounting Theory: A Ten-year Perspective. *The Accounting Review*, 65(1): 131-156.