

# THE RELATIVE ACCURACY OF MANAGEMENT EARNINGS FORECAST AND IPO PERFORMANCE

**Yanthi Hutagaol**

**I Gusti Ayu Esika**

School of Accounting & Finance  
BINUS Business School - BINUS University  
Jl. Hang Lekir I No.6 Jakarta, 12120

## **Abstract**

*Prior studies show that IPO earnings forecasts are robustly related to the IPO initial market valuation and its short-run performance (i.e., Chen, Firth, and Khrisnan, 2001; How and Yeo, 2001; Li and McConomy, 2004; Keasey and McGuinness, 2008). This study investigates the impact of management earning forecasts on the long run performance of IPOs in Indonesia Stock Exchange (IDX). It hypothesizes that the relative accuracy, which is revealed at the end of IPO year, will affect the pricing process in the market that in turn will affect the IPO 1 year performance. Unlike most prior studies, this study uses relative forecast bias, as the direction of the bias will have different impact on the IPO after-market performance. Using 94 IPOs that went public in 2000-2008 in IDX, this study finds some interesting results. In general, the sample shows an average of negative forecast bias. The upward bias IPOs has a better 1-year performance than the downward bias IPOs. They also appear to have a higher initial performance. Finally, the cross section analysis result shows a robust evidence to support the research hypothesis that the relative accuracy of management earnings forecast is positively related to the IPO 1-year performance.*

**Key words:** *IPO, management earning forecast, IPO performance*

There have been many studies show the pivotal role of management earnings forecast in valuing IPO (i.e., Chen, Firth, and Khrisnan, 2001; How and Yeo, 2001; Li and McConomy, 2004; Keasey and McGuinness, 2008). Most studies find that disclosing earnings forecast in IPO prospectus does put different impact on IPOs early market price. Other scholars examine the impact of earnings forecast disclosure on the IPO initial market performance (i.e, Firth, 1998).

The other stream of the management earnings forecast research is to evaluate the accuracy of the forecasts at the end of IPO year. Some examines the factors affecting the accuracy (i.e, Jagi, 1997) and others observe the association between the accuracy and the IPO performance (Jelic, Saadouni, & Briston, 1998).

In some markets, such as, Hong Kong, Malaysia, China, Taiwan, earnings forecast disclosure is a mandatory disclosure in the IPO prospectus.

---

Korespondensi dengan Penulis:

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

Email: yhutagaol@binus.edu

While in other market, such as UK, Australia, Canada, Korea, including Indonesia, it is a voluntary disclosure. In a market with tighter legal environment, such as US, the SEC does not encourage the issuers to disclose their earnings forecast.

This study is to investigate the impact of the earnings forecast bias on the IPO after-market performance. To authors' knowledge, this is among the first study of IPO management earnings forecast and its relation to the IPO performance in Indonesia. Prior study using Indonesia IPO data examines the determinants of the management forecasts accuracy (Siauw, Hutagaol, & Ekaputra, 2008). This study differs to prior studies in several points. Firstly, most studies in this field examine the influence of forecast bias on the short-run performance, while this study focuses on the IPO after-market performance (1 year after IPO). Secondly, instead of absolute forecast errors, the study uses relative forecast bias (errors). The motivation is by using relative bias, we could analyze different impacts of upward bias (positive errors) and downward bias (negative errors) on the IPO performance. Thirdly, as mentioned earlier, in most developing markets in Asia such as, China, Taiwan, Malaysia, earnings forecast disclosure is mandatory, while in Indonesia, it is a voluntary disclosure. This study provides evidence of IPO earnings forecast behaviour in a voluntary disclosure and low litigation environment. Moreover, although disclosing earnings forecasts is voluntary, more than 60% issuers disclosed management earnings forecast in their IPO prospectuses during year 2000-2008.

### **Prior Studies**

Lev & Penman (1990) argue that earnings forecasts are used by managers of "good news" firms to screen themselves out from other firms. In this argument, it could be said that management earnings forecast is used as a signal to the

firm value. Trueman (1986) states in the voluntary disclosure setting, the managers would be motivated to release earnings forecasts if such actions leads to higher firm market value.

Empirical evidence show strong support to Trueman (1986). In UK market, Keasye and McGuinees (1991) find that IPOs that disclose earning forecast are differently valued in the market on their initial trading day compared to their counterparts. Disclosing earnings forecast is perceived as a signaling tool that has a positive impact on the firm initial market value. The similar findings are also found in Australia (How & Yeo, 2001), Thailand (Jog & McConomy, 2003). This robust finding is found in both voluntary and mandatory environments.

If the earnings forecasts have high explanatory power to the IPO initial market value, it could be expected that it provides some explanation to the IPO stylish fact, underpricing. Unlike the robust findings in the initial market valuation, the empirical evidence on the initial returns is mixed. Using Hong Kong data, Keasey & McGuinness (2008) finds that IPOs that disclose earnings forecast are less underpriced than their counterparts. This implies that disclosing earnings forecast in the IPO forecast could reduce the information assymetry in the market. This results in more accurate market price. Firth (1998) finds that forecasted errors are negatively related to the underpricing level. However, some studies do not find significant evidence to support the hypothesis (i.e., How & Yeo, 2001). This study contributes to the research area by focusing the impact of the earnings forecast on the long term performance.

Another research are of IPO earnings forecast discusses about the accuracy of the forecasts. Chen, et al. (2001) argue that management forecast is more accurate than other forecasts, such as random walk and interpolation forecasts. They find robust findings to support the hypothesis. Evidence on the IPO earnings forecast accuracy

## The Relative Accuracy of Management Earnings Forecast and IPO Performance

Yanthi Hutagaol & I Gusti Ayu Esika

reveals the absolute forecast errors varies among the countries. Harnett & 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. Firth & Smith (1992) find that company size had an unanticipated positive relationship with forecast errors. Lee, et al. (1993) reported positive relationships between the time horizon of the forecast and absolute forecast errors. Chan, et al. (1996) find that low profit variability and smaller changes in economic growth accompany small forecast errors. Jaggi (1997) shows that older companies were associated with smaller errors.

Jaggi, et al. (2006) finds that the IPO earnings forecast is more accurate, which results in low forecast errors, 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. Jaggi, et al. (2006) examines the effect of the forecasts to manager behavior to anticipate the errors. They use the relative forecast errors to make a differentiation between the optimistic and the conservative forecasters, then, observe the manager behavior in earnings management. This study also uses relative forecast errors to differentiate the upward bias and downward bias producer, and its effect on the investor pricing decision in the long-run

### DATA AND RESEARCH METHOD

The research sample covers all companies that went public in Indonesia Stock Exchange (IDX) during the 2000-2008 period. There were 153 IPOs conducted during the period, however, considering not all issuers disclose earning forecast in the prospectus, the sample is reduced to 96 IPOs. Two IPOs that produced extreme earnings forecast errors are excluded; therefore this concludes the fi-

nal sample to 94 IPOs. The yearly sample distribution is shown in table 1 below.

**Table 1. Sample Distribution By Year**

Year	IPOs	IPOs that Disclose Earnings Forecasts
2000	20	13
2001	31	27
2002	22	15
2003	9	4
2004	12	9
2005	8	6
2006	11	8
2007	23	12
2008	17	2

Forecast bias (FER) is measured by the percentage of forecast deviation to the actual earnings. Positive (negative) FER means that actual earnings are greater (lower) than forecasted earnings. Positive (negative) FER is, then, perceived as upward (downward) bias. Mathematically, FE is expressed as follows,

$$FER_i = \frac{AE_i - FE_i}{|FE_i|} \quad (1)$$

Where,

$FER_i$  = Forecast bias IPO  $i$ .

$AE_i$  = Actual earnings IPO  $i$  at the end of financial IPO year

$FE_i$  = Forecasted earnings IPO  $i$  disclosed in the prospectus

This study investigates the impact of forecasted bias on the IPO 1-year performance. The IPO performance is measured by cumulative abnormal returns (CAR), which is an accumulation of monthly abnormal returns up to 1 year after IPO. The abnormal return is the difference between IPO returns and the market returns. CAR is measured by the equation below,

$$CAR_i = \sum_{t=1}^{12} AR_{i,t} \quad (2)$$

Where,

$CAR_i$  = Cumulative abnormal return IPO  $i$ .

$AR_{i,t}$  = Abnormal returns IPO  $i$ , in month  $t$

FE = Forecasted earnings disclosed in the IPO prospectus

Since prior IPO studies (i.e, Ritter (1991), Lee, et al (1996) Yi (2001)) show that there is a consistent relationship between the first day initial returns (IR) and the IPO long-run performance, this study employs IR as a control variable in examining the impact of FER on CAR. As explained in prior sections, there are some other control variables that are found to be related to the IPO long-run performance. They are used in the research model as control variables. The variables are company size, percentage of share retained by old shareholders at IPO, auditor reputation, and industry. The research model to analyze the impact of IPO forecasted bias and its long-run performance is expressed as follows,

$$CAR = \beta_0 + \beta_1 FER + \beta_2 IR + \beta_3 SIZE + \beta_4 PERCENT + \beta_5 IND \quad (3)$$

Where,

CAR = Cumulative abnormal return

FER = Forecast bias

IR = IPO initial returns on the 1<sup>st</sup> trading day

SIZE = normal log of company net assets after the IPO

RET = percentage of shares retained by old shareholders at the IPO

IND = Industry dummy. Financial industry is assigned 1, otherwise 0

## RESULT

Table 2 shows some summary statistics relating to the research sample. It shows that on average, the IPO sample generates -17.66% forecast bias, which is significant different to zero at  $\alpha = 1\%$ . The sample also produces a median of -12.49% forecast bias, which is significant different to zero at  $\alpha = 5\%$ . About 68% sample produced negative FERs. This indicates that more than half of IPO firms during the research period are aggressive in their forecast behavior.

Table 2 also shows that the research sample is underpriced on average of 35.55%. This result is consistent to many IPO studies on the underpricing, including in Indonesia (Rahman & Hutagaol, 2008). The 1-year after IPO performance has an average of -3.2% compared to the market. This indicates that within 1 year after the floating, IPOs are underperformed the market. However, the statistical t-test confirms that the mean of CAR is not different to zero at  $\alpha = 5\%$ . The long-run underperformance of the sample is consistent to prior IPO study in Indonesia (Rahman & Hutagaol, 2008).

There are not many variations in the firm size of the sample and the percentage of shares retained by old shareholders. It is shown by the low standard deviation compared to the mean statistics of the variables. Regarding the industries, about 31% of sample is firms in financial industries.

**Table 2. Summary of Statistics Descriptive**

Variables	Mean	Median	Standard deviation	Min	Max
FER	-0.1766	-0.1249	0.6120	-3.6481	1.9830
CAR	-0.03202	-0.1203	0.8484	-2.6848	2.7980
IR	0.3555	0.2046	0.7615	-0.8750	4.8000
SIZE	11.1025	10.9755	0.5689	9.8604	13.2011
PERCENT	0.7537	0.7639	0.1044	0.5000	0.9303
IND	0.3085	0	0,464355	-	-

## The Relative Accuracy of Management Earnings Forecast and IPO Performance

*Yanthi Hutagaol & I Gusti Ayu Esika*

In order to analyze the impact of the relative accuracy of the management earnings forecast, we divide the sample into 2 groups; the positive forecast (upward) bias IPOs and the negative forecast (downward) bias IPOs. Table 3 presents the tests results of mean difference of those 2 groups for all research variables.

**Table 3. Results of Mean Difference Tests between Upward and Downward Bias IPOs**

Variables	Mean of upward bias IPOs (30 IPOs)	Mean of downward bias IPOs (64 IPOs)	Mean difference t-test (p-value)
IR	0.4683	0.3028	1.0267 (0.1542)
CAR	0.1975	-0.1396	1.8020** (0.0384)
SIZE	11.2111	11.0516	1.1348 (0.1313)
PERCENT	0.7430	0.7587	-0.6846 (0.2481)
IND	0.3000	0.3125	-0.1211 (0.4520)

Notes: \*\* significant at  $\alpha=5\%$

From all variables, only CARs between the two groups that are different significantly at  $\alpha=5\%$ . The result shows that the upward bias IPOs has an average positive 1-year abnormal return, while the downward bias IPOs has an average negative 1-year abnormal return. It implies that the upward bias IPOs tend to outperform the market in the long-run, while the downward bias IPOs tend to underperform the market.

While in the long-run, the two groups show a significant different performance, that is not the case in the short-run. Both groups generate positive initial returns meaning that both groups are underpriced on the 1<sup>st</sup> trading day. The upward bias IPOs have a higher initial return (46.83%) than the downward bias IPOs do (30.28%). It reflects that on their early trading days, IPOs of the upward bias IPOs are, relatively, valued higher in the market, compared to the IPOs of the aggressive forecaster.

It is expected that forecast behavior difference could be characterized by firm size and the

IPO prominent signal (the percentage of shares retained by old shareholders). Table 3 shows that there are no significant differences in SIZE and PERCENT among the IPOs. This result confirms the descriptive statistics figures of these two variables that demonstrate little variation.

It is expected that financial firms are more conservative in their forecasts due to the industry heavy regulation. However, table 3 shows that there are more financial firms in the downward bias group than in the upward bias group, though the difference is trivial, and appears to be statistically insignificant.

To examine the impact of the forecast errors on the IPO long-run performance, this study uses regression analysis as expressed in equation 3. Table 4 presents the regression results for the IPO long-run performance model.

**Table 4. Regression Analysis on Forecast Errors and IPO Long-run Performance**

Variable	Coefficient	t-stat (p-value)
Constant	1.9181	0.8924 (0.3749)
FER	0.4019	2.2364* (0.0291)
IR	-0.5656	-4.5984** (0.0000)
SIZE	-0.1491	-0.7405 (0.4620)
PERCENT	-0.0131	-0.0143 (0.9886)
IND	-0.2128	-1.0658 (0.2909)
Adjusted R <sup>2</sup>	0.2537	
F-stat (p-value)	5.2831** (0.0005)	

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

Equation 3:

$$CAR = \beta_0 + \beta_1 FER + \beta_2 IR + \beta_3 SIZE + \beta_4 PERCENT + \beta_5 IND$$

Where: CAR = cumulative abnormal return of IPOs; FER = the percentage of forecast bias given by equation 1; IR = the percentage of IPO return on the 1<sup>st</sup> trading day; SIZE = normal log of net asset after IPO; PERCENT = the percentage of shares retained by old shareholders at IPO; IND = a dummy variable for industry take 1 for financial firm, and 0 otherwise.

Table 4 shows that the research model explains about 25.37% of the variability of the explana-

tory variables. The model is valid and statistically significant at  $\alpha=10\%$ . The result shows that forecast bias (FER) is positively related to the IPO long-run performance. It suggests that the higher the bias, the higher the IPO performance 1 year after IPO. Higher FER, here, should be understood in management behavior context. Higher FER means that actual earnings are higher than forecasted earnings, that results in positive FER (upward bias), and vice versa.

Table 4 also shows that IR is negatively related to the IPO 1 year performance. This implies that IPO that are underpriced in the 1<sup>st</sup> trading day will be corrected in the long-run which, then, results in lower price, 1 year after IPO. The control variables (SIZE, PERCENT, and IND) have unexpected sign. This study expects that there are positive association between SIZE, PERCENT, IND and IPO 1-year returns. The first two are usual explanatory variables used in explaining the IPO performance. IND is a control variable for financial firms, that are usually valued differently by the market. All shows negative coefficients, although they are statistically insignificant.

## DISCUSSION

The negative forecast bias found in this study is similar to previous studies in Australia (How & Yeo, 2001) and Hong Kong (Chen, et al., 2000) that also find a mean of negative forecast bias. However, this is different to results in other markets, such as in China (Chen and Firth, 1998), Malaysia (Jelic, et al, 1998), and Singapore (Firth, et al, 1995). The underlying difference between the results is on the disclosure regulation. As explained in the beginning of this paper, earnings forecast disclosure in IPO prospectus is mandatory in countries like China, Taiwan, Malaysia, Singapore, while in other countries such as Australia, New Zealand, Canada, including Indonesia, such disclosure is voluntary. It suggests that there is a different management behavior towards earning forecast in a

different disclosure regulation.

Despite the significant difference of management earnings forecast bias between the upward bias IPOs and the downward bias IPOs, the firm characteristics (firm size, percentage of shares retained at the IPOs, and industry) between the two groups are similar. Firm characteristics do not relate to the accuracy of management earnings forecast. However, the finding shows that it is related to the long-run market performance. The finding shows the 1 year performance of the upward bias IPOs is significantly higher than the performance of the downward bias IPOs. This result gives an insight that market might have anticipated the managers behavior on IPO earnings forecasts, as found by Chen & Firth (1999). It shows that after the earnings forecast bias is revealed at then of the fiscal year, the investors are disappointed with the result of downward bias IPOs, then, they revise their valuation, which results in lower performance, relatively, to the valuation of the upward bias IPOs.

The analysis of the research model shows that the relative accuracy of forecast bias is positively related to the 1-year IPO performance. It implies that, in the long-run, the market rewards the firms that generate positive forecast bias at the IPO. When the FE is revealed at the end of financial year of IPO, market reacts accordingly. When FE is "good news" – actual earnings tend to achieve or beat the forecast, which results in upward bias – market rewards it with higher IPO returns. When FE is "bad news" – actual earnings tend to be failed or lower than the forecast, which result in downward – market is disappointed, which is shown by lower IPO returns. This result provides strong evidence to the hypothesis of this research.

This result confirms findings by Firth (1998) and How & Yeo (2001). Using different measures of forecast accuracy, they conclude that the forecast bias is positively related to the IPO 1 year performance. Indirectly, this result also supports other findings (Chen & Firth, 1999) show that earnings

## The Relative Accuracy of Management Earnings Forecast and IPO Performance

*Yanthi Hutagaol & I Gusti Ayu Esika*

forecast at the IPO, is still relevant to the IPO pricing 1 year after the IPO.

The next result shows a negative relationship between the short-run and long-run performance. It implies that the more underpriced IPOs on the early trading days will have lower valuation after 1 year traded. This is consistent with the over-reaction hypothesis stating that the underpriced IPOs is caused by investors' over-reaction on the early trading days. In the long-run, investors will adjust their valuation, which results in the under-performance. This result also confirms prior studies on the relationship between the short-run and long-run performance of the IPO (i.e. Ritter, 1991).

The insignificant result of control variables (firm size, percentage of shares retained, and industry) could be explained as follows. The control variables are known to the market on the 1<sup>st</sup> trading day, therefore they should have been incorporated on the initial returns. However, they become irrelevant to 1-year after IPO valuation; therefore they appear to be insignificant to the IPO 1-year performance.

### CONCLUSION AND SUGGESTION

#### Conclusion

This study investigates the impact of the management forecast bias on the IPO long-run performance. The forecast bias is revealed when the actual earnings is announced at the end of IPO financial year. Unlike prior studies in the field, this study uses the relative forecast bias instead of the absolute forecast bias. Using this measure allows researchers to analyze the different impact of the bias direction on the IPO performance.

This study finds that 68% of IPO sample generate downward bias meaning that the actual earnings do not achieve the target. There is a significant performance difference between the upward bias and the downward bias IPOs. The upward bias IPOs show a better performance in the initial and 1-year performance. However, only the difference

in 1-year performance appears to be statistically significant.

Moreover, this study finds that the forecast bias is positively related to the IPO 1-year performance. It shows that market do reward IPOs that achieve or exceeds the earnings forecast. Furthermore, the forecast bias, here, could also indicate the management behavior in earnings forecast at the IPOs. The upward bias indicates the managers take the conservative standpoint, while the downward bias indicates that the managers take the aggressive stand point. So, the result shows that market do reward the conservatives more than the aggressive. This result confirms findings by Firth (1998) and How & Yeo (2001).

#### Suggestions

The study result has several implications to the regulation bodies. Since the result shows that the relative forecast accuracy affects the IPO performance in the long-run, it is suggested that earnings forecast disclosed in the prospectus should be verified by the firms' auditors and the IPO underwriters. The verification statement should be enclosed in the prospectus. BAPEPAM might also request the forecast method should be disclosed in the prospectus. Such disclosures would help investors to analyze the accuracy of management forecast, before they price the IPOs.

The result shows that the impact of relative accuracy of the management forecasts on the investors' reaction. However, before the forecast bias is revealed at the end of fiscal year, the management should have known whether the target forecast number will be achieved or not. Based on this assumption, it could be inferred that there is an incentive for managers to manage their earnings so that the end of year earnings figure closer to the forecast. This could be a new avenue to investigate the impact of management earnings forecast accuracy on the earnings management.

## REFERENCES

- Chen, G., and Firth, M. 1999. The Accuracy of Profit Forecasts and Their Roles and Association with IPO Firm Valuation. *Journal of International Financial Management and Accounting*, 10: 202-206.
- 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: 225-240.
- Cheng, T., & Firth, M. 2000. An Empirical Analysis of The Bias and Rationality of Profit Forecasts Published in New Issue Prospectuses. *Journal of Business Finance and Accounting*, 27: 423-446.
- Firth, M. 1998. IPO Profit Forecasts and Their Role in Signaling Firm Value and Explaining Post-listing Returns. *Applied Financial Economic*, 8: 29-39.
- How, J. & Yeo, J. 2001. The Impact of Forecast Disclosure and Accuracy on Equity Pricing: The IPO Perspective. *Journal of Accounting, Auditing, and Finance*, 16: 401-425.
- Jaggi, B. 1997. Accuracy of Forecast Information Disclosed in The IPO Prospectuses of Hong Kong Companies. *The International Journal of Accounting*, 32: 301-319.
- Jelic, R., Saadouni, B., & Briston, R. 1998. The Accuracy of Earnings Forecasts in IPO Prospectuses on The Kuala Lumpur Stock Exchange. *Accounting and Business Research*, 29: 57-72
- Jog, V. & McConomy, B. 2003. Voluntary Disclosure of Management Earnings Forecast in IPO Prospectuses. *Journal of Business, Finance, and Accounting*, 30: 125-167.
- Rahman A. & Hutagaol, Y. 2008. Manajemen Laba melalui Akreal dan Aktivitas Real pada Penawaran Perdana dan Hubungannya dengan Kinerja Jangka Panjang (Studi Empiris pada BEJ). *Jurnal Akuntansi Keuangan Indonesia*, 5: 1-29.
- Yi, J. 2001. Pre-offering Earnings and The Long-run Performance of IPOs. *International Review of Financial Analysis*, 10: 53-67.