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The decision to voluntarily provide an IPO prospectus earnings forecast

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Conditions under which private firms going public will voluntarily disclose earnings forecasts in initial public offerings prospectuses are explored. The analysis implies younger, riskier companies do not voluntarily forecast earnings because of the potential costs of not performing as well as forecast.

I. Introduction

Earnings forecasts can be extremely important when valuing initial public offerings (IPOs) since public information about private companies is often limited (Bilson *et al.*, 2006). Surprisingly, however, IPO prospectuses in most countries do not contain earnings forecasts. Nondisclosure of IPO earnings forecasts runs contrary to the general consensus that it is beneficial to disclose information to shareholders; a vast literature outlines the benefits of disclosure.¹

This article demonstrates that younger, riskier firms do not voluntarily forecast earnings because of the potential costs of not performing as well as forecast. Costs of providing and subsequently underperforming a prospectus earnings forecast include the potential threat of litigation, losses on retained holdings, reduced credibility for secondary offerings and damage to reputations. The expected costs of forecasting can therefore outweigh the benefits, especially for younger, smaller, less credible firms.

Anticipated costs of providing an IPO prospectus earnings forecast are modelled using the Black–Scholes put option pricing formula since they

are dependent upon the share price reaction to negative earnings surprises. The model implies that younger, smaller, less credible firms with volatile earnings are unlikely to voluntarily provide IPO earnings forecasts. These implications are tested using Australian IPOs during 1990–1997, a time period when Australian IPO earnings forecasts were completely voluntary.

II. The IPO Prospectus Earnings Forecast Disclosure Decision

Initial Public Offerings (IPOs) tend to be valued using the comparable firm valuation approach (Kim and Ritter, 1999; Houston *et al.*, 2004). The next period's expected earnings per share $E(e_1)$ are multiplied by a 'comparable firm' price-earnings ratio PE equal to the average price-earnings ratios of publicly traded firms in the same industry with similar expected growth rates and risk profiles:

$$V = PE \times [E(e_1)] \quad (1)$$

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¹These include reduced information asymmetry, increased stock liquidity, a reduced cost of capital, increased financial valuation, and increased information intermediation (Verrecchia, 1983; Diamond and Verrecchia, 1991; Botosan, 1997; Francis *et al.*, 1997; Healy *et al.*, 1999; Lang and Lundholm, 1999).

Kim and Ritter (1999) empirically demonstrate that earnings forecasts are highly relevant when valuing IPO firms due to the limited information environment of nonpublic firms. Credibly received earnings forecasts that exceed previous expectations are especially beneficial, since valuations V rise by the increase in earnings expectations $E(e_1)$ times the comparable firm PE ratio.

Given compelling benefits from an earnings forecast disclosure, why then do most IPO prospectuses not contain an earnings forecast? This note argues that issuers will not voluntarily forecast earnings when benefits are outweighed by the potential costs of not performing as well as forecast. The potential downside to providing and subsequently underperforming an earnings forecast includes (1) the threat of shareholder or regulatory lawsuits, especially if forecasts appear to be overly optimistic (Hughes, 1986; Tinic, 1988), (2) losses on retained holdings due to adverse share price reactions to negative earnings surprises, (3) reduced credibility for secondary offerings, and (4) damage to the original owners' and underwriters' reputations. These potential costs depend upon the extent to which a negative earnings surprise induces a fall in the share price (S_1) relative to the IPO listing price L (Lowry and Shu, 2002). It is assumed that the potential costs are a constant n times the capital loss ($L - S_1$), where $n > 0$, so the expected cost (EC) is determined by the Black-Scholes formula for European put options:

$$EC = n \times [Le^{-r(T-t)}N(-d_2) - S \times N(-d_1)] \quad (2)$$

where S is the lognormally distributed post-listing share price, r is the risk-free interest rate, $(T - t)$ is the time between IPO listing and the date that earnings are reported, and $N(-d_1)$ and $N(-d_2)$ are given by the Black-Scholes formula. A strong threat of litigation (as in the United States) or strong investor reaction to earnings surprises increase proportion n .

The potential to underperform the prospectus earnings forecast will be higher when earnings are volatile, as reflected by the expected cost equation (EC) being increasing in volatility, a well-known feature of the Black-Scholes put option formula. Firms with volatile, uncertain earnings that face higher expected costs of forecasting will therefore be less likely to forecast, all else being equal, thus leading to the following hypotheses:

- H1: Companies with high earnings variability are less likely to provide prospectus forecasts.
- H2: Companies that have incurred earnings losses and therefore have uncertain,

unreliable earnings are less likely to provide prospectus forecasts.

It is well-known that younger, smaller firms tend to have higher earnings volatility (Yhim *et al.*, 2003). The age of IPO firms is therefore considered to be a proxy for *ex ante* risk (Ritter, 1991). Earnings forecasts of young firms with limited operating histories would also be less credibly received, since investors have yet to learn about their profitability (Pastor and Veronesi, 2003). These observations lead to a third hypothesis:

- H3: Younger, smaller firms are less likely to provide prospectus forecasts.

III. Data Sources and Summary Statistics

The data set encompasses IPOs issued in Australia during January 1990 to December 1997, a sample that is uniquely suited to test hypotheses H1–H3 because Australian IPOs had a completely voluntary choice as to whether to forecast earnings during the sample period. Observations are obtained from Thomson Financial's SDC database and Connect 4 database. Unit offerings, closed-end mutual funds, and investment and real estate trusts are excluded due to their unique institutional setting. Initial public offerings (IPOs) without detailed prospectus and annual report information are excluded. The final sample consists of 154 IPOs.

Summary statistics for the entire sample and for forecasters vs. nonforecasters are provided in Table 1. Almost one-third of IPOs in the sample choose not to provide profit forecasts in their prospectuses.

The mean and SD of earnings variability are both lower for forecasters, thus supporting hypothesis H1. Earnings variability (*Histvol*) is the SD of earnings before interests and tax (EBIT) for the 3 years prior to listing divided by EBIT in the year after listing, expressed as a percentage, and is therefore a scaled measure of volatility that allows comparison across firms. Another variable, *Dperform*, is used to measure earnings quality uncertainty due to prior operating losses. *Dperform* is a dummy variable that equals 1 if at least one EBIT in the 3 years prior to listing is negative, and is 0 otherwise. Only 12% of forecasting companies reported negative earnings in the 3 years prior to listing compared to 67% of their nonforecasting counterparts, thus supporting

Table 1. Australian IPO sample summary statistics

	Gross proceeds (Mil \$)	AGE (days)	Histvol	Dperform
Overall Sample (n = 154)				
Mean	76.18	3 613.39	0.49	0.21
SD	186.44	5 902.56	0.61	0.41
Maximum	1500.00	36 395.00	3.47	0.00
Minimum	1.00	32.00	0.02	1.00
Nonforecasters (n = 54)				
Mean	31.46	1 681.91	0.82	0.67
SD	162.47	2 845.00	0.64	0.49
Maximum	1.00	15 238.00	2.66	0.00
Minimum	1200.00	86.00	0.23	1.00
Forecasters (n = 100)				
Mean	100.34	4 722.97	0.43	0.12
SD	194.70	6 859.06	0.59	0.33
Maximum	1.86	36 395.00	3.47	0.00
Minimum	1500.00	32.00	0.02	1.00
Difference in Mean (<i>t</i> -stat)	-2.22*	-3.77*	2.32*	4.14*
Difference in Median (Wilcoxon rank-sum test)	-6.44*	-3.37*	4.01*	4.73*

Note: *significance at 5% level.

Table 2. Probit model on the likelihood of IPO firms providing earnings forecasts

	Coefficients		
	Model 1	Model 2	Model 3
Constant	1.2837 (6.0963*)	0.0705 (0.5269)	1.5079 (6.7865*)
Histvol	-0.4813 (-2.1732*)		
AGE		0.0001 (2.9315*)	
Dperform			-1.5079 (-4.2162*)
Likelihood ratio statistics	4.4547*	13.0583*	18.6102*
MaFadden <i>R</i> -square	0.0538	0.0672	0.2236

Notes: Figures in parentheses are *Z*-statistics. *5% significance.

hypothesis H2 since IPOs with uncertain earnings are less likely to forecast.

The mean AGE of forecasters (measured as the difference in days between the date of incorporation and the first listing date) is almost three times higher than nonforecasters, thus supporting hypothesis H3 which predicts that younger companies are less likely to provide profit forecasts. Amounts raised by forecasters tend to be three times higher than their counterparts, thus further supporting hypothesis H3.

IV. Results

Hypotheses H1–H3 are formally tested using the probit model. The dependent variable, *Dfore*, is a discrete-choice variable that equals 1 if company *i*

provides a profit forecast, and is zero otherwise. Three probit models are specified to avoid multicollinearity amongst explanatory variables:

$$\text{Model 1: } Dfore_i = \alpha_1 + \alpha_2 histvol_i + \varepsilon_{1,i}$$

$$\text{Model 2: } Dfore_i = \beta_1 + \beta_2 AGE_i + \varepsilon_{2,i}$$

$$\text{Model 3: } Dfore_i = \delta_1 + \delta_2 Dperform_i + \varepsilon_{3,i}$$

Results are presented in Table 2, including likelihood ratio statistics and McFadden *R*-squares. For all models in Table 2, the likelihood ratio statistics strongly reject the null hypothesis that all coefficients are zero. The results show that the probability of providing an earnings forecast increases sharply when there is a decrease in historical earnings variability, an increase in earnings quality (no operating losses in the 3 years prior to listing), and an increase in firm age, thus providing strong

empirical support for hypotheses H1, H2 and H3, respectively.

V. Conclusion

This note analyses the decision to voluntarily provide an IPO prospectus earnings forecast. The analysis implies that younger, riskier, less credible firms tend to refrain from supplying a prospectus forecast because of the higher expected costs of potentially underperforming a forecast. A further implication is that companies should have the flexibility to opt out of forecasting earnings if the potential costs of forecasting outweigh the benefits. Forcing companies to forecast earnings in their prospectuses, as occurs in New Zealand, could therefore be counter-productive. This raises the question of whether it is advisable for Australia to continue to move towards encouraging universal inclusion of earnings forecasts in IPO prospectuses, as opposed to allowing companies the flexibility to opt out of providing an earnings forecast if the perceived risk of doing so is too high.

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