DO LOSS FIRMS MANAGE EARNINGS AROUND SEASONED EQUITY OFFERINGS?

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ABSTRACT

The uniqueness of this paper is in linking firms' valuation to their discretionary choices and by demonstrating that loss firms do not manage earnings during SEOs as earnings are not informative for their valuation. Instead, we find that loss firms manage upward research and development expenditures (R&D), i.e., overinvest in R&D, consistent with high R&D valuation for loss firms. We further show that overinvestment in R&D is negatively associated with future stock return for loss firms, and, therefore, market does not recognize loss firms' discretion.

BODY

In this paper, we examine earnings management among loss seasoned equity offerings (SEOs). While prior literature on earnings management around SEOs generally concludes that SEO firms manage earnings, we demonstrate that only profitable firms inflate their earnings, whereas loss firms do not manage earnings. Instead, they inflate research and development expenditures (R&D), a strategy that is actually decreasing bottom line earnings. Our finding is consistent with differential valuation for profit and loss firms, and highlights the importance of more accurate approach in earnings management research to study accounting choices for profit and loss firms.

Prior literature on managers' reporting behavior around SEOs mainly concentrates on two types of earnings management, accrual earnings management (Teoh et al., 1998; Rangan, 1998; Shivakumar, 2000; DuCharme et al., 2004) and real earnings management (e.g., Cohen and Zarowin, 2010). The general conclusion is that SEO firms overstate their earnings by using accrual-based or transaction-based earnings management. By mainly focusing on earnings, it's implicitly assumed that earnings are the main focus of managerial discretion during SEOs. While this assumption sounds reasonable for profitable firms as earnings are value-relevant for their valuation (e.g., Ohlson, 1995; Graham et al., 2005), earnings management among loss firms is reasonably questionable mainly because earnings are not that informative for them. For example, Hayn (1995) demonstrates that loss firms have lower earnings response coefficient than profitable firms, explaining such differential perception of earnings for loss vs. profit firms by the existence of a liquidation option. Callen et al. (2008) suggest that for loss firms, traditional earnings-based valuation models do not allow for reliable market value estimates, and demonstrate that market participants value loss firms based on the level and growth in revenues rather than earnings. Using the residual-income valuation model (Ohlson, 1995), Franzen and Radhakrishnan (2009) show that the valuation multiplier on R&D expenditures is different for profit and loss firms: it is negative for profit firms, but positive for loss firms.

Based on prior literature findings that earnings are not that value-relevant for loss firms (e.g., Hayn, 1995; Demers and Lev, 2001; Callen et al., 2008), we posit that managers of loss SEO firms do not engage in earnings management, but rather manage other accounting items that

are important for their firms' valuation: R&D expenditures. To test our predictions, we first separate all SEO firms into two groups: profit and loss firms, and then consider whether earnings and R&D expenditures are managed differently by these two groups. We expect that only profitable firms manage earnings upward; whereas for loss firms we do not expect to find evidence of earnings management, but rather R&D management.

Our sample period begins in 1989, as statements of cash flow become available, and ends in 2011. The list of IPO firms, data on underwriter names, venture capitalist (VC) backing, offer price, and market capitalization are obtained from the Securities Data Corporation Global New Issues Database by Thompson Financial. Founding dates and underwriters' reputation rankings are obtained from Jay Ritter's website (http://bear.warrington.ufl.edu/ritter/ipodata.htm). Financial accounting data is from Compustat. Patent data is obtained from the National Bureau of Economic Research (NBER) website (http://www.nber.org/patents/) that contains information for all patents granted in the U.S. from 1975 to 2006. For the period 1996–2000, we calculate ownership retention and market capitalization using data manually collected by Alexander Ljungqvist. We follow the IPO literature and exclude from the sample unit offerings, Real Estate Investment Trust offerings, American Depository Receipts, closed-end funds, and firms in regulated industries (SIC 4910–4939) and financial institutions (SIC 6000–6999). We further exclude IPOs with an offer price of less than $1 per share or market value of less than $20M immediately after issue. Finally, as many of our variables are scaled by average total assets, to avoid a small denominator problem, we remove firms with average total assets of less than $100,000. Our final sample includes 3,763 IPO firms.

We start our analysis by examining the weight SEO investors put on different items in the financial statements (sales growth, R&D expenditures and earnings) for all SEO firms, and separately for profit and loss firms. This analysis provides a benchmark to see what drives the market value for two groups of firms, and where in turn, managers might be tempted to focus their efforts of discretion (assuming that firm's valuation is a major incentive for managers during SEOs). The results reported in Table 1 below show that profit and loss SEO firms have different accounting value drivers, consistent with our expectations and findings in prior literature. Thus, profit firms are mainly priced on earnings whereas loss firms are not priced on earnings at all. On the other hand, loss firms are positively priced on R&D expenditures whereas profit firms are not priced on R&D.

TABLE 1
Pricing of IPO Firms

Coefficient estimates from an ordinary least squares regression (OLS) of the market value of equity, *MV*, at the end of the month after the first annual financial statements of the SEO firms are reported, on positive and negative earnings, *PEBXI_noRD* and *NEBXI_noRD*, adjusted for R&D expenditures, R&D expenditures, *RD*, the natural logarithm of sales growth, *LOGSGR*, the natural logarithm of the firm's age, *LOGAGE*, the ratio of total liabilities to average total assets, *LEV*, and industry price-to-earnings ratio, *IND_PE*. *MVE*, *PEBXI_noRD*, *NEBXI_RD* and *RD* are scaled by average total assets, *TA*.

$$MV_i = \beta_0 + \beta_1 PEBXI\_noRD_i + \beta_2 NEBXI\_noRD_i + \beta_3 RD_i + \beta_4 LOGSGR_i$$
$$+ \beta_5 LOGAGE_i + \beta_6 LEV_i + \beta_7 IND\_PE_i + \varepsilon_i$$

Variable	All SEOs	Profit SEOs	Loss SEOs
Intercept	4.18	3.1	5.34
	(16.98)	(10.54)	(10.66)
PEBXI_noRD	5.97	10.65	-

	(9.58)	(11.20)	-
NEBXI_noRD	-0.134	-	0.666
	(-0.31)	-	(1.27)
RD	6.8	-1.00	6.12
	(11.73)	(-0.63)	(7.65)
LOGSGR	1.83	2.66	1.13
	(12.27)	(12.12)	(4.97)
LOGAGE	-0.62	-0.48	-0.874
	(-8.18)	(-5.97)	(-4.64)
LEV	-2.055	-1.958	-1.903
	(-9.81)	(-7.81)	(-4.87)
IND_PE	-0.053	-0.049	-0.035
	(-5.39)	(-4.41)	(-1.61)
Year dummies	Yes	Yes	Yes
Adjusted R^2	22.52%	26.32%	17.92%
N (obs.)	3,130	2,369	761

Next, we estimate discretion over earnings and R&D for all SEO firms, and separately for profit and loss firms. Consistent with prior literature results that accruals are abnormally high around SEOs (Rangan, 1998; Teoh et al., 1998; Shivakumar, 2000; DuCharme et al., 2004), we also document significantly positive abnormal accruals for a full SEO sample. However, when we split all SEO firms into two groups, we find that discretionary accruals are abnormally high only for profit firms, while for loss firms discretionary accruals are actually significantly negative. This result demonstrates in Table 2 below that loss SEO firms do not manage earnings upward during seasoned equity offerings. Moreover, we document that loss SEO firms overinvest in R&D (a strategy that actually reduces earnings) as R&D expenditures are positively valued by investors for these firms. This new finding highlights the importance of linking firms' valuation to their discretionary accounting choices instead of using a default assumption of prevailing incentives for earnings management.

TABLE 2
Time-series Profile of Discretionary Accruals and Discretionary R&D

Panel A: Mean and median asset scaled discretionary accruals, in percent, for all SEO firms and by group, from year -1 to +3 relative to the seasonal equity offering (year 0). Discretionary accruals are defined as the difference between the scaled current accruals and fitted values from the estimation regression.

	All SEOs		Profit SEOs		Loss SEOs	
Year	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
-1	-0.00	0.99[***]	1.19[***]	1.36[***]	-3.64[***]	-0.68[***]
0	1.80[***]	2.13[***]	4.64[***]	3.05[***]	-6.63[***]	-1.57[***]
+1	0.57[*]	1.47[***]	1.58[***]	1.85[***]	-2.63[***]	-0.32
+2	0.25	1.09[***]	0.69[***]	1.13[***]	-1.29[*]	0.75
+3	0.23	0.89[***]	0.27	0.88[***]	0.13	0.92

Panel B: Mean and median asset scaled discretionary R&D, in percent, for all SEO firms and by group, from year -1 to +3 relative to the seasonal equity offering (year 0). Discretionary

R&D expenditures are defined as the difference between the scaled R&D and fitted values from the estimation regression.

Year	All SEOs		Profit SEOs		Loss SEOs	
	Mean	Median	Mean	Median	Mean	Median
-1	1.15***	0.00***	0.89***	0.00**	1.81***	0.09***
0	0.35**	0.00	-0.35***	0.00***	2.17***	0.05***
+1	0.19	0.00**	0.25*	0.00	0.04	-0.12***
+2	-0.14	-0.00***	0.05	0.00*	-0.72*	-0.30***
+3	-0.18	-0.00***	-0.16	0.00*	-0.25	-0.19*

***, **, * Denotes significance at the < .01, < .05, and < .10 levels, respectively.

Finally, we examine whether discretionary items during SEOs are associated with post-SEO operating underperformance, what would be consistent with opportunistic or myopic motives driving managerial reporting. Alternatively, if managers use discretion over accounting items to signal superior future performance (i.e., signaling hypothesis), discretionary items will be positively associated with future performance. Consistent with prior literature (Teoh et al., 1998, Cohen and Zarowin, 2010), we find that discretionary accruals are negatively related to future operating performance, but we document that this association holds only for profit firms. Next, in Table 3, we provide new evidence that discretionary R&D expenditures are also negatively related to future operating performance; but this relation is completely driven by loss SEO firms. Therefore, we do not find evidence in support of the signaling hypothesis. Our findings of negative association between discretionary items (accruals for profit firms, and R&D expenditures for loss firms) are consistent with opportunistic or myopic managerial behavior. To sum, we present robust evidence that during the SEOs, firms mainly manage accounting items that are value-relevant for investors, and that loss firms do not manage earnings, but manage R&D instead.

TABLE 3
Future Operating Performance and Discretionary Items for SEO Firms by Group
Regression analysis of the association between a change in return on assets, ΔROA from pre-SEO year (year -1) to one year after the SEO (year +1) and discretionary accruals, $DACC$, and discretionary R&D, DRD.
Panel A: Regression analysis of the association between a change in return on assets, ΔROA, from pre-SEO year (year -1) to one year after the SEO (year +1) and discretionary accruals, $DACC$, for all SEO firms and by group:

$$\Delta ROA_{t-1,t+1} = \beta_0 + \beta_1 DACC_{i,t} + \beta_2 SGR_{i,t} + \beta_4 CAPEX\_GR_{i,t} + \varepsilon_i$$

	Model I raw ΔROA			Model II performance-adjusted ΔROA		
Variable	All SEOs	Profit SEOs	Loss SEOs	All SEOs	Profit SEOs	Loss SEOs
Intercept	0.0009	-0.0062*	0.0623***	0.0023	0.0139	0.0129
	(0.15)	(-1.66)	(4.07)	(0.31)	(1.83)	(0.64)
DACC	**-0.0927***	**-0.1652***	0.0551	**-0.0656**	**-0.1709**	0.0702
	(-2.35)	(-4.12)	(0.81)	(-2.29)	(-2.18)	(0.54)
SGR	0.0185*	0.0077**	0.0229	0.0127**	0.0226	0.0159
	(1.83)	(2.28)	(1.33)	(2.29)	(1.50)	(1.34)
CAPEX_GR	0.0000***	-0.0026	-0.000***	0.0000	0.0050	0.0000

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	(2.64)	(-0.97)	(-3.61)	(0.46)	(0.78)	(1.61)
Adjusted R^2	2.24%	1.88%	2.94%	0.51%	1.25%	0.94%
N (obs.)	3,113	2,364	609	2,553	1,989	564

***, **, * Denotes significance at the < .01, < .05, and < .10 levels, respectively.

Panel B: Regression analysis of the association between a change in return on assets, ΔROA from pre-SEO year (year -1) to one year after the SEO (year +1) and discretionary R&D, *DRD,* for all SEO firms and by group*:*

$$\Delta ROA_{t-1,t+1} = \beta_0 + \beta_1 DRD_{i,t} + \beta_2 SGR_{i,t} + \beta_4 CAPEX\_GR_{i,t} + \varepsilon_i$$

	Model I raw ΔROA			Model II performance-adjusted ΔROA		
Variable	**All SEOs**	**Profit SEOs**	**Loss SEOs**	**All SEOs**	**Profit SEOs**	**Loss SEOs**
Intercept	0.0061	0.0308***	-0.1356***	0.0069	0.0093	-0.0051
	(0.58)	(3.62)	(-4.75)	(0.61)	(0.87)	(-0.21)
DRD	**-0.6866****	-0.0759	**-0.7369***	**-0.6706****	0.0527	**-0.7971****
	(-2.07)	(-0.21)	(-1.71)	(-2.68)	(0.15)	(-3.35)
SGR	-0.0064	0.0155	-0.0140	0.0228	0.0231	0.1434***
	(-0.61)	(0.82)	(-1.05)	(1.40)	(1.27)	(6.59)
CAPEX_GR	-0.0217***	0.0095	-0.0319***	-0.0094	0.0046	-0.0086*
	(-3.91)	(1.22)	(-3.45)	(-1.60)	(0.59)	(-1.65)
Adjusted R^2	3.58%	0.60%	7.21%	2.07%	0.83%	11.94%
N (obs.)	2,051	1,475	576	1,594	1,188	406

***, **, * Denotes significance at the < .01, < .05, and < .10 levels, respectively.
Variables are defined as follows:
DACC = Discretionary accruals; Discretionary accruals are defined as the difference between the scaled current accruals and the fitted values from the estimation regression.
DRD = Discretionary R&D expenditures. Discretionary R&D are defined as the difference between the scaled R&D and the fitted values from the estimation regression.
CAPEX_GR = Growth in capital expenditures, defined as percentage change in capital expenditures: $((CAPEX_t - CAPEX_{t-1})/CAPEX_{t-1})$.

Our paper makes important contributions to the SEO earnings management literature. First and foremost, we link SEO firms' valuation with the use of discretion over various accounting items. Our study is unique in that it identifies a setting where different firm types have the incentives to apply discretion over different accounting items, and find results consistent with the incentives. Next, we are the first to document that loss firms do not manage earnings during SEOs, but they do manage R&D, i.e., they overinvest in R&D as R&D expenditures are important value-driver in their valuation. Finally, we demonstrate that discretionary items are associated with future underperformance: discretionary accruals are negatively related to future performance for profit firms, whereas discretionary R&D expenditures are negatively related to future performance for loss firms. While prior literature find negative association between discretionary accruals and future performance for SEO firms in general, we show that this association is mainly driven by profit firms.

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