

Earning Management and Cost stickiness

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Abstract. This study investigates the effects of incentives for earnings management on the stickiness of selling, general, and administrative expenses. It first shows that cost behaviors are different for earnings management suspect firms and non-suspect ones. Specifically earnings management suspect firms mitigate cost stickiness, when faced with declining sales. This result is probably due to managers aggressively cutting costs for earnings management or preparing for bad times when faced with declining sales.

Keywords: cost stickiness, earnings management

1 Introduction

Since Anderson et al. (2003), prior research has shown that costs behave asymmetrically. There are two kinds of asymmetric cost behaviors: cost stickiness showing a smaller cost decrease with sales decrease than a cost increase with the same sales increase and anti-cost stickiness with a bigger cost decrease. Asymmetric cost behavior results not only from managers' rational decisions under uncertainty in future demands, but also from managers' discretionary decisions for self-interests (Anderson et al., 2003).

This study investigates the cost behaviors of earnings management firms following Anderson et al. (2003), Chen et al. (2012), and Koo (2011). Roychowdhury (2006) reported that abnormal Selling, General and Administrative expenses (SG&A) are used for earnings management. Cohen et al. (2010) suggested that earnings management can be achieved by changing the timing and size of expenditures. These results imply that through cost manipulation, earnings management can derive different cost behaviors. For example, managers of firms with a high chance of losses will cut costs aggressively and reduce idle resources, trying to avoid the reporting of losses and show weak cost stickiness.

The results of the paper are as follows. First, the cost stickiness of firms with higher earnings management incentives is weaker than that of firms with lower ones. In particular, firms with incentives to avoid losses showed less cost stickiness. This result suggests that firms reduce costs to improve earnings in the short run as suggested in Arellano and Higgins (2008). It is also consistent to Roychowdhury (2006) who shows discretionary expenditures cut for losses avoidance.

This paper contributes to the literature in the following ways. This paper provides additional evidence for earnings management through expenses. Various earnings management measures are applied for the robustness of the results.

Section 2 discusses the relevant literature and develops the empirical hypothesis as to the relationship between earnings management and cost stickiness. Section 3 describes the samples and the empirical research design. Section 4 presents the empirical results. Section 5 concludes and discusses the limitations.

2 Prior Studies and Hypotheses Development

Traditionally, costs are assumed to behave symmetrically as cost drivers (e.g. sales) change. It has been recently found that costs are sticky, decreasing less with sales decline than they increase with sales rise. Cost stickiness is shown to be affected by capacity utilization, employee/asset intensity, sales trends, industry characteristics, corporate governance, etc. (Anderson et al., 2003; Chen et al., 2012; Koo, 2011).

Chen et al. (2012) found evidence that cost asymmetry is positively associated with managers' empire building incentives due to the agency problem. Moreover, they find that the positive association between the agency problem and SG&A cost asymmetry is more pronounced under weak corporate governance. Koo et al. (2011) showed that behaviors of total costs, total manufacturing costs, SG&A costs, and labor costs are different for firms with different earnings management incentives under different reported earnings levels.

Previous studies have shown that earnings management is conducted in order to avoid losses or to meet the analysts' forecasts or investors' expectation (Cohen et al., 2010; Roychowdhury, 2006). Burgstahler and Dichev (1997) showed that firms with earnings near 0 had upward earnings management in order to avoid small losses or earnings declines. In Cohen et al. (2010) and Roychowdhury (2006), SG&A expenses are reduced to avoid losses, as well.

In sum, managers have incentives to manage costs as to avoid losses and for other reasons, and earnings management incentives would affect the cost behaviors of these firms, leading to the following first hypothesis.

Hypothesis 1: Earnings management firms have different cost stickiness than other firms.

Hypothesis 2: Firms with higher discretionary accruals have less sticky costs than other firms.

3 Research Design

3.1 Empirical Models

The empirical model (1) incorporates the earnings management (EM) variable in order to see whether the cost behaviors of earnings management firms are different from those of other firms (Hypothesis 1).

$$\begin{aligned}
 \log(\text{Cost}_{i,t}/\text{Cost}_{i,t-1}) = & \beta_0 + \beta_1 \log(\text{Sales}_{i,t}/\text{Sales}_{i,t-1}) + \beta_2 \text{Dec}_{i,t} \\
 & + \beta_3 \text{Dec}_{i,t} \times \log(\text{Sales}_{i,t}/\text{Sales}_{i,t-1}) \\
 & + \beta_4 \text{EM}_{i,t} \\
 & + \beta_5 \text{EM}_{i,t} \times \log(\text{Sales}_{i,t}/\text{Sales}_{i,t-1}) \\
 & + \beta_6 \text{EM}_{i,t} \times \text{Dec}_{i,t} \\
 & + \beta_7 \text{EM}_{i,t} \times \text{Dec}_{i,t} \times \log(\text{Sales}_{i,t}/\text{Sales}_{i,t-1}) + r_{i,t}
 \end{aligned} \tag{1}$$

where, $\text{Cost}_{i,t}$: SGA of firm i , year t
 $\text{Sales}_{i,t}$: Sales of firm i , year t
 $\text{Dec}_{i,t}$: dummy for sales decrease,
 1 if sales of firm i , year t are lower than prior year; 0 otherwise
 $\text{EM}_{i,t}$: dummy for earnings management, 1 if suspected; 0 otherwise

β_7 reflects the impact of earnings management on cost stickiness.¹ The firms trying to avoid losses or earnings decline will actively cut costs with a sales decrease and reduce cost stickiness, resulting in a positive β_7 .

3.2 Earnings Management Variables

Accruals are one of the most popular measures of earnings management. This study uses the Jones model, the modified Jones model of Dechow et al. (1995) in order to estimate discretionary accruals (DA). The group of the highest quintiles of discretionary accruals is the treatment group of earnings management.

3.3 Samples

The samples of this paper are December ending U.S. firms in WRDS COMPUSTAT with full financial data from 1997 to 2007. Data from year 2008 and on are excluded

¹ β_4 , β_5 , and β_6 show the effect of earnings management on the overall level of the cost change rate, the sensitivity of cost change to sales change, and the level change of the cost change rate in the sales decline range, respectively.

since the macro-economic environment could be different from 2008, the year of the global financial crisis. The samples are required to satisfy the following conditions:

- (1) firms do not belong to the banking, insurance, and security industries
- (2) financial statements are available
- (3) SG&A costs are not greater than sales

The average number of samples for each year is about 1,200 firms. The major industries are Chemicals & Allied Products (SIC 2800), Indl, Comml Machy, Computer Eq (SIC 3500), and Electr, Oth Elec Eq, Ex Cmp (SIC 3600); these industries comprise of nearly 8% of the total samples, respectively.

4 Results

4.1 Earnings management and Cost stickiness

<Table 1> shows the results of Model (1) by testing H1 on the earnings management and cost stickiness. The effect of earnings management on cost stickiness is tested by β_7 ; it is significantly positive as expected with all of the measures, implying that firms with earnings management incentives have less sticky SGA costs.

Table 1. Earnings management and cost stickiness

	Jones		Modified Jones	
	coefficient	t-value	coefficient	t-value
β_0	0.0170	1.54	0.0171	1.55
β_1	0.6428 ***	55.3	0.6437 ***	54.59
β_2	-0.0190 ***	-3.81	-0.0197 ***	-4
β_3	-0.3004 ***	-12.24	-0.3023 ***	-12.52
β_4	-0.0028	-0.46	-0.0036	-0.6
β_5	-0.0299	-1.27	-0.0281	-1.22
β_6	0.0052	0.48	0.0103	0.94
β_7	0.0917 *	1.89	0.1100 **	2.18
Obs.	12,173		12,173	
Adj.R ₂	0.41		0.41	

*, **, *** are significant at 10%, 5%, and 1% levels, respectively.

† Year and industry dummies are included in all the models.

5 Conclusion

The cost stickiness of a smaller cost decreases with a sales decline than a cost increase with a sales rise, resulting from future demand uncertainty and the holding of idle resources. It also results from managers' intentional earnings management.

Firms suspected for earnings management with high discretionary accruals showed weaker cost stickiness than others. This action implies that firms cut down costs aggressively in order to manage earnings when faced with declining sales. Firms trying to avoid losses also behave likewise.

This study is subject to several limitations. One of them is the lack of control variables influencing cost stickiness in prior studies. Use of alternative measures for earning management to improve robustness is also left for future extension of this study.

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