Advances in Accounting, incorporating Advances in International Accounting xxx (2013) xxx–xxx

Contents lists available at ScienceDirect

Advances in Accounting, incorporating Advances in International Accounting

journal homepage: www.elsevier.com/locate/adiac

Cost behavior and executive bonus compensation ☆

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ARTICLE INFO

Available online xxxx

Keywords:
Executive compensation
Cost behavior
Bonus compensation
Capacity utilization

ABSTRACT

Prior literature provides compelling evidence of an asymmetric relation between executive bonus compensation and earnings performance. In particular, this literature reports that compensation committees assign greater weight to good (positive) earnings performance than poor (negative) earnings performance. Taken together, the prior literature provides strong support for critics who claim that compensation committees blindly protect executives from earnings underperformance. We further examine this issue by investigating whether a firm's cost behavior (i.e., the relation between expenses and sales) provides an explanation for the apparent inefficiency in executive compensation contracts. Our evidence suggests that executives are rewarded more for increases in ROA that arise from normal cost behavior than other increases in ROA consistent with these increases being perceived as more persistent. In contrast, we do not find such a relationship for decreases in ROA which suggests that executives are largely shielded from decreases in ROA that follow normal cost behavior. We examine two factors suggested by the prior literature, expected future sales and the extent of capacity utilization, which may provide an explanation for why executives are shielded from normal cost behavior decreases in ROA. When these additional factors are included in our empirical models, our evidence suggests that the asymmetric relation between changes in CEO bonus compensation and increases and decreases in earnings performance documented in prior literature goes away. That is, our results suggest that compensation committees do not blindly protect executives for earnings underperformance. On the contrary, our evidence suggests that these committees take into account other non-earnings information when deciding how much weight to give to a decrease in earnings and that executive compensation may not be as inefficient as suggested by prior research.

1. Introduction

Prior research reports that the relation between earnings and executive compensation is attenuated when earnings performance is poor or declining. For example, Gaver and Gaver (1998) and Shaw and Zhang (2010) report that CEO cash compensation is less sensitive to poor earnings performance than good earnings performance. Similarly, Matsunaga and Park (2001) and Jackson, Lopez, and Reitenga (2008) report evidence consistent with the notion that decreases in ROA attenuate executive pay-performance sensitivity. Overall, this literature provides ample support for critics who assert that executive compensation is largely shielded from earnings underperformance (Bebchuk & Fried, 2004; Jensen & Murphy, 1990). However, critics who allege a weak link between firm performance and CEO compensation overlook the possibility that certain decreases in "recurring" earnings may be unrelated to managerial performance but rather a function of a firm's cost behavior. The objective of our study is to investigate whether cost behavior provides an explanation for the previously observed weak link between earnings underperformance and executive bonus compensation.

Traditional costing models assert that variable costs should change in proportion to changes in the activity driver (Noreen, 1991). That is, costs should increase when revenue increases and decrease when revenue decreases but because of the presence of fixed costs the change in total costs should not be as great as the change in sales. We refer to this as normal cost behavior.[2] Prior research has shown that information can be gained from examining the relationship between revenue and expenses. For example, Gu, Jain, and Ramnath (2006) provide evidence that the relation between sales and expenses provides more information with respect to the persistence of earnings than examining revenue and expenses

☆ We are grateful to Austin Reitenga, Brian Cadman, Scott Jackson and Wendy Bailey for their helpful comments. This manuscript was previously presented in January 2009 at the AAA Management Accounting Section (MAS) Meeting in St. Petersburg, Florida, at the University of South Carolina and in August 2009 at the AAA Annual Meetings in New York City. We are also grateful to Thomson Financial for providing sales forecast data, available through the Institutional Brokers Estimate System. These data have been provided as a part of their broad academic program to encourage sales expectation research.

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[2] Our results do not speak to whether costs are "sticky". Sticky costs are when costs decrease less when activity levels decline than they rise when activity levels increase (Anderson et al., 2003). What causes costs to be "sticky" is a current debate in the managerial accounting literature. One side of the debate contends that this relation is due to managerial intervention (Anderson et al., 2003) whereas the other side of the debate argues that it is more likely to be mechanically induced (Anderson et al., 2007). In other words, we do not examine the asymmetric behavior of costs in relation to increases and declines in sales.

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http://dx.doi.org/10.1016/j.adiac.2013.08.001

separately. They also provide evidence that the market does not fully incorporate the implications of this joint information into stock prices. However, cost behavior should be most important when it relates to a contracting context. We examine whether compensation committees take cost behavior into account when setting incentive pay. To the best of our knowledge, this is the first study to examine this question.

We examine two non-earnings-related factors, future sales expectations and capacity utilization, that prior literature suggests are potential explanations for the relationship between cost behavior and firm underperformance. First, prior research suggests that one reason management may not immediately react to underperformance is the expectation that performance may improve in a relatively short period of time (Anderson, Banker, Huang, & Janakiraman, 2007). If this is true, compensation committees may shield executives from decreases in earnings that arise from normal cost behavior and more so when future sales are expected to revert to prior levels in a relatively short period of time. To test this notion, we examine the effect of future sales expectations on the relation between cost behavior and executive bonus compensation.

Second, prior research also provides evidence that cost behavior is related to the interaction between changes in sales and the level of capacity utilization (Balakrishnan, Petersen, & Soderstrom, 2004). When sales decline, excess capacity is created because a portion of capacity is fixed for a range of sales activity. The consequence of this "fixity of costs" (Anderson et al., 2007) is that when sales decrease the ratio of expenses to sales will increase, leading to a decline in ROA, because the fixed capacity costs are spread over a lower level of sales (Anderson et al., 2007). In addition, if there is uncertainty about future demand and firms must incur costs to reduce excess capacity (even if not fixed) managers may delay reductions in capacity until they are more certain about the permanence of the decline in demand (Anderson, Banker, & Janakiraman, 2003). This suggests that compensation committees may react differently to a decline in ROA depending on how management responds to excess firm capacity. We examine the effect of capacity utilization on the relation between cost behavior and bonus compensation.

To begin our investigation of the relation between cost behavior and executive bonus compensation, we first examine whether increases and decreases in ROA are weighted similarly in the bonus compensation function. Consistent with Jackson et al. (2008), our empirical evidence suggests that the CEO bonus compensation weight on increases in ROA is significantly greater than the weight on decreases in ROA. In particular, we find that increases and decreases in ROA of the same absolute magnitude are not rewarded and penalized equally. In fact, we find that for each quintile of the absolute value of the change in ROA, the absolute value of the change in bonus compensation is significantly greater for an increase in ROA compared to a decrease in ROA. In a multivariate context, we find that the coefficient on increases in ROA is significantly greater than the coefficient on decreases in ROA after controlling for a number of cross-sectional determinants of CEO bonus compensation identified in the prior literature (e.g., Baber, Kang, & Kumar, 1998; Core, Holthausen, & Larcker, 1999; Zhou & Swan, 2003). Taken together, our evidence confirms prior research that a non-linear relation exists between executive bonus compensation and earnings performance, as CEOs are rewarded more for a 1 percent increase in ROA than they are penalized for the same 1 percent decrease in ROA.

We next examine whether compensation committees differentially weight changes in ROA that flow from normal versus non-normal cost behavior. An increase in ROA that results from normal cost behavior comes from an increase in sales and expenses where expenses do not increase as much as the increase in sales. That is, sales increase but the ratio of SG&A costs to sales declines. A decrease in ROA that results from normal cost behavior comes from a decrease in sales and expenses where expenses do not decrease as much as the decrease in sales. That is, sales decrease but the ratio of SG&A costs to sales increases. All other changes in ROA are deemed to be the result of non-normal cost behavior.

Our evidence suggests that increases in ROA with normal cost behavior are rewarded to a greater extent than increases in ROA with non-normal cost behavior, holding the magnitude of the change in ROA constant. This result is consistent with the idea that increases in ROA that result from normal cost behavior are more persistent than increases in ROA that result from non-normal cost behavior (Gu et al., 2006). However, for decreases in ROA, our evidence is inconsistent with the notion that compensation committees treat decreases in ROA from normal cost behavior as more persistent than decreases in ROA from non-normal cost behavior. On the contrary, we find that the change in bonus compensation is significantly lower in all five changes in ROA quintiles for decreases in ROA from normal cost behavior compared to decreases in ROA from non-normal cost behavior.[3]

Our empirical tests also examine whether committees differentially weight increases and decreases in ROA that flow from changes in sales and expenses consistent with normal cost behavior. When we compare the absolute magnitude of changes in bonus compensation for normal cost increases and decreases in ROA of the same relative magnitude, we find that executives are rewarded more for an increase in ROA than they are penalized for a decrease in ROA for normal cost behavior. Importantly, this result is robust to a multivariate setting that includes a number of controls for other known determinants of CEO bonus compensation (e.g., earnings persistence). Thus, our evidence with respect to decreases in ROA from normal cost behavior suggests that compensation committees seem to shield executives from such declines. To further explore this apparent shielding, we examine the relation between changes in bonus compensation when ROA decreases and two variables that could potentially provide information on how to interpret such decreases, excess capacity and expected future sales activity.

Consistent with our expectation, we find that for decreases in ROA that are the result of normal cost behavior, the change in bonus compensation is increasing in the forecasted change in sales revenue. However, for decreases in ROA that are the result of non-normal cost behavior we find no relation between expected changes in future sales and changes in CEO bonus compensation. With respect to capacity, we find that for decreases in ROA that follow the normal cost condition, the greater the increase in capacity utilization, the more CEO bonus compensation is protected from a decrease in ROA. That is, the further the firm moves away from excess capacity, the more likely it is that the compensation committee will protect the executive from the effects of the current decrease in ROA. Consistent with our evidence with respect to expected future sales, for decreases in ROA that follow the non-normal cost condition, we find no relation between capacity utilization and changes in CEO bonus compensation. Taken together, our evidence suggests that the extent to which compensation committees shield executive bonus compensation from decreases in ROA that follow normal cost behavior is, at least in part, determined by both expected future sales and excess capacity utilization.

Overall, our evidence suggests that executives are protected from decreases in ROA when the decrease in ROA flows from the normal cost relation, especially the higher the change in the expectation of future sales and the greater the increase in capacity utilization. However, our evidence also suggests that individually these factors do not fully explain the asymmetric treatment of increases and decreases in ROA by compensation committees. Therefore, we examine a full model that includes each of these factors as explanatory variables in a change in bonus compensation model. We find that changes in expected future sales and changes in capacity utilization are significantly related to changes in bonus compensation. More importantly, the inclusion of these variables in the compensation model seems to explain the non-linear response of compensation committees to increases and decreases in ROA, at least with respect to changes that follow normal cost behavior. Consistent with this conclusion, we find that within the normal cost behavior condition the coefficient on increases in ROA is not significantly different

[3] In fact, we find that the change in bonus compensation for the first four negative changes in ROA quintiles under the normal cost behavior condition is positive (ranging between 7.1 and 0.7%) and significantly so in two of these quintiles.

Please cite this article as: Caylor, M.L., & Lopez, T.J., Cost behavior and executive bonus compensation, *Advances in Accounting, incorporating Advances in International Accounting* (2013), http://dx.doi.org/10.1016/j.adiac.2013.08.001