

# Career Concerns and Earnings Management

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**Abstract:** Motivated by the disconnect between survey evidence documenting that executives prioritize implicit contracting (i.e., labor market-based career concerns) when making earnings management decisions (Graham et al., 2005) and the extant literature's focus on explicit contracting to explain earnings manipulation, we analytically examine the role of managerial career concerns in earnings management. Building on Holmstrom (1982, 1999), we present a career concerns-based earnings management model that incorporates the unique reversing nature of earnings management. A key insight derived from the model is that whether the predictions of a traditional career concerns model prevail, which is to say that managers engage in more income-increasing behavior in their early years, critically depends upon the reversal characteristics of the earnings management vehicle chosen.

**Keywords:** earnings management; career concerns; accruals and real activities management; accruals reversal; reversal of earnings management

**JEL Classification:** M40; M41

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## 1. Introduction

Top executives of US publicly traded firms often face intense incentives to manage earnings.<sup>1</sup> Most of the extant academic literature links the incentives for earnings management, directly or indirectly, to explicit contracts such as executive cash bonus maximization contracts (Healy, 1985) or the avoidance of debt covenant violations (DeFond

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<sup>1</sup>For an excellent and extensive academic summary of the earnings management literature, we refer the reader to Ronen and Yaari (2008). Prominent examples of non-academic sources of attention to the issue of earnings management pressures include the famous speeches by Levitt (1998, 2003).

and Jambalvo, 1994).<sup>2</sup> While such explicit contracting-based incentives undoubtedly play an important role, the literature has been almost silent about the effects of implicit contracts and incentives over earnings management.<sup>3</sup> This is surprising, especially given the survey evidence of Graham et al. (2005), which documents that more than three quarters of responding executives consider upward mobility in the labor market (i.e., an implicit career incentive) to be more important than short-run current compensation benefits in influencing their earnings management decisions.<sup>4</sup> Our study addresses this apparent disconnect between the importance placed upon implicit contracts by executives and the extant literature's focus on explicit contracts by developing an analytical model of earnings management that builds upon the seminal career concerns work of Holmstrom (1982, 1999). The extensions introduced by our model, incorporating the particular features of alternative forms of earnings management, lead to some notable results that deviate from the predictions of conventional career concerns models. Whereas in the traditional career concerns setting managers are expected to exert themselves relatively more in their early years in order to influence the labor market's assessment of their quality, our model predicts that managers will engage in *less* income-increasing earnings management in their early career stage (relative to their later stage) under certain conditions related to the value-destructive properties of particular types of earnings management.

Broadly speaking, executives can manage reported earnings in one of two ways. First, managers may use "accruals management", which refers to the discretion available within Generally Accepted Accounting Principles (GAAP) (Dechow and Skinner, 2000) to intertemporally shift earnings from one period to another. Alternatively, executives may use real activities manipulations to alter the timing and amount of expenditures in order to affect the current period's bottom line (e.g., cutting R&D or advertising expenditures). Unlike accrual-based earnings management, which simply shifts expenses or revenues into different reporting periods without directly affecting the underlying economics of the firm, earnings management based on real activities manipulations "deviate[s] from normal business practices" (Roychowdhury, 2006). Empirical evidence supports the notion that, as deviations from optimal behavior, real earnings manipulations have first-order cash flow consequences and are associated with longer-term value destruction to the firm (see, e.g., Li, 2010 and Vorst, 2015). Our model incorporates these characteristic differences between accrual-based and real earnings management, leading to predictions that differ from the standard career concerns model depending upon the earnings management vehicle chosen. Specifically, our model suggests that managers will undertake fewer real activities manipulations in the early stage of their careers relative to their later years, when this form of earnings management exceeds a certain threshold of value destruction.

Our paper contributes to the literature on earnings management and career concerns across several dimensions. First, to the best of our knowledge, ours is the first study to analytically explain earnings management behavior from the perspective of implicit as opposed to explicit incentives. Whereas in an explicit contracting setting the manager's compensation is paid in accordance with some agreement at the *end* of the period based upon *realized* output, the wages of the manager in our model are determined at the *beginning* of the period based upon *expected* output. In other words, the managers in our model are rewarded for future potential rather than by contractually defined compensation based upon realized performance. Second, implicit incentives provide a different perspective relative to explicit contract-based incentives with which to view the pervasiveness of earnings management. Specifically, incentives from explicit contracts typically describe earnings management behaviors as "event-driven" and hence tend to occur on a less frequent basis.<sup>5</sup> By contrast, incentives from implicit contracts (such as a manager's value in the labor market) are perennially present rather than driven by a particular event, and hence they are likely

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<sup>2</sup>Additional contracting-based motives for earnings management that have been examined include political cost considerations (Key, 1997; Patten and Trompeter, 2003), the establishment of more favorable equity and bond pricing terms (Teoh et al., 1998a, 1998b; Aharony et al., 2010; Higgins, 2013), the reduction of debt renegotiation costs (Bohren and Haug, 2006), and executive equity compensation (Cheng and Warfield, 2005).

<sup>3</sup>One exception is the study by Bowen et al. (1995). These authors consider the impact of various stakeholders' implicit claims, notably excluding managerial career concerns, by accounting for *method* choices (i.e., not accruals or real activities management *per se*).

<sup>4</sup>Furthermore, Gillan et al. (2009) document that fewer than half of the CEOs of S&P 500 firms have comprehensive *explicit* employment agreements.

<sup>5</sup>A representative example of an "event-driven" explicit incentive to manage earnings upwards is the case where an executive chooses to engage in income-increasing manipulations in order to avoid her firm's violation of a debt covenant.

to be more profound and persistent. Last and perhaps most importantly, although our analysis is anchored on the Holmstrom (1982, 1999) framework, the particularities of accruals reversal and value destruction of alternative earnings management tools lead to important predictions that are in direct contrast to Holmstrom in some cases.

The remainder of our paper is organized as follows. In Section 2 we set up, analytically solve, and discuss the predictions generated by our model, while Section 3 concludes the paper.

## 2. Model

### 2.1. Model setup and assumptions

We develop a model of earnings management based upon managerial career concerns by building on the seminal work of Holmstrom (1982, 1999). As interpreted by Autrey et al. (2007), “Career concerns are implicit incentives that arise because a manager expects future wages to be affected by the labor market’s use of publicly-observable performance measures to assess the manager’s ability.” A distinctive characteristic of career concerns models is that managers are incentivized by future, rather than current, compensation.

To illustrate the effects of career concerns, we adopt a simple three-period setting in which the manager is *young*, *established*, and then *retired* in each respective period. In Periods 1 and 2, the executive is responsible for managing the firm, while in Period 3 the manager may serve as a board member during retirement.<sup>6</sup> Consistent with competitive labor markets being a key premise underlying the general career concerns framework, we also assume that the manager is paid, at the beginning of each period, the expected *true* output that she will deliver in the current period given her history of *observed* outputs.

Let  $\tilde{\eta}$  denote the manager’s unobservable productivity, with the following prior distribution:

$$\tilde{\eta} \sim N(m0, 1/h0) \tag{1}$$

where  $N(\cdot, \cdot)$  is the standard normal distribution function,  $m0$  is the mean of the prior, and  $h0$  is the precision of the prior (i.e., the inverse of its variance).

Let  $\tilde{y}t$  denote the true output, which can be written as follows:

$$\tilde{y}t = \tilde{\eta} + \varepsilon t, \tag{2}$$

where  $\varepsilon t$  is a shock that is uncorrelated with the manager’s productivity  $\tilde{\eta}$ . Shocks in each period are assumed to be normally distributed with precision  $h\varepsilon$ , such that

$$\varepsilon t \sim N(0, 1/h\varepsilon). \tag{3}$$

We further assume that  $\tilde{\eta}$ ,  $\varepsilon 1$ ,  $\varepsilon 2$ , and  $\varepsilon 3$  are jointly independent.

In Period 1, when the manager is *young*, she can “impress” the labor market in the short term by boosting reported profits via earnings management. Let  $\tilde{x}t$  denote the manager’s reported (or observed) output for period  $t$ , which may differ from the true output,  $\tilde{y}t$ , because the manager has the option of manipulating earnings during periods  $t = 1, 2$ . Thus, the observed output,  $\tilde{x}t$ , is the true output plus the current period’s manipulations (plus any consequences of the prior period’s manipulation).<sup>7</sup>

Period 1 reported earnings are therefore given by:

$$\tilde{x}1 = \tilde{y}1 + \alpha 1 = \tilde{\eta} + \alpha 1 + \varepsilon 1, \tag{4}$$

where  $\alpha 1$  is the earnings management in Period 1.

<sup>6</sup>We assume that the manager’s stature remains static throughout her career. In other words, the model abstracts away from other incentives such as “promotion.”

<sup>7</sup>Alternatively stated, in our setting one can interpret  $\tilde{y}t$  to be “unmanaged earnings” and  $\tilde{x}t$  to be “reported earnings,” except in period 3 when  $\tilde{y}3$  and  $\tilde{x}3$  are interpreted instead as the value added from the manager’s post-retirement board service.

A critical feature of our model, which we now introduce, is that the earnings managed in Period 1 will reverse, at least partially, or lead to value destruction, in Period 2. This assumption states that earnings cannot be indefinitely managed upwards, either via accruals or through real activities manipulations. Even though accruals management decisions are assumed to be value-neutral in that they only involve using the discretion allowed within GAAP to intertemporally shift *reported* earnings, while not impacting real activities or value creation, the manager nevertheless needs to balance the books via accruals reversals “eventually”. Attempts to persistently manage earnings via accruals will eventually trigger a forced earnings restatement or fraud investigation. More severely, real activities manipulations such as reductions in R&D spending that boost earnings in the short term are assumed to have an adverse real impact on future firm performance (i.e., they are value-destroying). Furthermore, the adverse future impact of real manipulations is usually much greater than the short-term earnings gains that they generate.

In Period 2, when the manager is at the *established* stage of her career, the Period 1 accrual-based earnings manipulations begin to reverse, or the value-destroying effects of real activities manipulations begin to manifest, at the rate of  $\lambda$ , where  $0 < \lambda \leq 1$  if the channel of earnings management is accrual-based, and  $\lambda > 1$  if earnings management is accomplished via real activities manipulations. The rationale for these values of  $\lambda$  is that accrual-channeled earnings management merely shifts earnings across periods on a dollar-for-dollar basis, whereas real activities manipulations have a greater long-term value-destroying effect (i.e., the future value destruction exceeds the short-term reported earnings gained from the manipulations). This assumption, that accruals reversal is at most dollar-for-dollar while the reversal of real activities is more than dollar-for-dollar, will prove to have important implications for the predictions generated by our model.

Once again in Period 2, the manager has the option to engage in a second round of earnings manipulations. Let  $\alpha_2$  denote the amount of “new” earnings manipulations in Period 2. The reported output in Period 2 is given by:

$$\tilde{x}_2 = \tilde{y}_2 + \alpha_2 - \lambda\alpha_1 = \tilde{\eta} + \alpha_2 - \lambda\alpha_1 + \varepsilon_2. \quad (5)$$

Period 2 earnings manipulations also reverse in the subsequent period, after the manager is retired, and the market includes this reversal in the determination of the manager’s Period 3 output. The Period 3 output,  $\tilde{x}_3$ , which can be interpreted as the manager’s contribution to the firm’s value via board service during retirement, is given by:

$$\tilde{x}_3 = \tilde{y}_3 - \lambda\alpha_2 = \tilde{\eta} - \lambda\alpha_2 + \varepsilon_3. \quad (6)$$

Let  $w_t$  denote the executive’s wage in period  $t$ , paid at the beginning of period  $t$ . The assumptions of competitive labor markets and no explicit performance-based pay lead to the following:

$$w_1 = E(\tilde{\eta}|prior) \equiv m_0, \quad (7)$$

$$w_2(x_1) = E(\tilde{\eta}/x_1) \equiv m_1, \quad (8)$$

$$w_3(x_1, x_2) = E(\tilde{\eta}/x_1, x_2) \equiv m_2. \quad (9)$$

Note that Equations (8) and (9) specify that later period wages are based on the labor markets’ projections of the manager’s future *true* output given her prior *observed* history of outputs. For example, good performance in the first period will lead to higher pay in the second period, as captured by  $w_2$  in the model. Note also that we use the notation  $\{m_0, m_1, m_2\}$  to define the expected true outputs that are conditional upon prior realized outputs. Since  $\{m_0, m_1, m_2\}$  are equivalent to the wages, managers do care about  $m_1$  and  $m_2$  and will try to manage them.  $m_0$  is predetermined and is therefore not subject to the manager’s influence.

It is also worth mentioning that since the manager’s wages are assumed to be determined at the *beginning* of each period based upon *expected* output, the model effectively assumes away the role of *explicit* compensation contracts. Alternatively stated, the manager in our model is rewarded for future potential and not for past performance, whereas in an explicit contracting setting the manager’s compensation is paid at the *end* of the period based upon *realized* output. Accordingly, all of our model’s predictions derive solely from the manager’s career concerns, which are characterized by *implicit* incentives and *implicit* contracts.

## 2.2. The derivation of optimal earnings management levels

### 2.2.1. Defining the information structure, timeline, and equilibrium

We begin by assuming the existence of a competitive labor market under which many firms compete for managerial services. Ours is thus an *equilibrium* model under which managers exhibit career concerns because they care about their value in the managerial labor market.

The information structure can be summarized as follows:

- (a) The firm, the manager, and the market share the same prior belief about  $\tilde{\eta}$ . In other words, there is no asymmetric information or adverse selection at the outset;
- (b) The firm, the manager, and the market all see  $x_t$  each period; and
- (c) Only the manager sees  $\alpha t$ . In other words, this is a hidden action.

The sequence of events proceeds as follows:

#### Period 1:

- ⑦ The wage,  $w_1$ , is paid at the beginning of the period;
- ⑦  $\alpha_1$  is chosen by the manager; and
- ⑦  $\tilde{x}_1 = \tilde{\eta} + \alpha_1 + \varepsilon_1$  is realized at value  $x_1$ .

#### Period 2:

- ⑦ The wage,  $w_2(x_1)$ , is paid at the beginning of the period;
- ⑦  $\alpha_2$  is chosen by the manager; and
- ⑦  $\tilde{x}_2 = \tilde{\eta} + \alpha_2 - \lambda\alpha_1 + \varepsilon_2$  is realized at value  $x_2$ .

#### Period 3:

- ⑦ The wage,  $w_3(x_1, x_2)$ , is paid at the beginning of the period; and
- ⑦  $\tilde{x}_3 = \tilde{\eta} - \lambda\alpha_2 + \varepsilon_3$  is realized at value  $x_3$ .

Although the manager's earnings manipulations in each period,  $\alpha t$ , constitute a hidden action, in equilibrium both the firm and the labor market correctly anticipate  $\alpha t$ . In other words, information is symmetric along the equilibrium path. Moreover, the equilibrium follows the notion of a "Perfect Bayesian Equilibrium" under which *sequential rationality* applies.

### 2.2.2. Solving the model

The manager's objective is to choose the optimal  $\alpha t$  ( $t = 1, 2$ ) so as to maximize her utility. The manager's utility function is represented as the sum of the undiscounted value of her lifetime compensation (i.e., wages), net of the cost of earnings management, as follows:

$$U = E [w_1 - c(\alpha_1) + (w_2 - c(\alpha_2)) + w_3], \tag{10}$$

where  $c(\alpha t)$  denotes the cost associated with earnings manipulations in period  $t$ ,  $t \in \{1, 2\}$ , with the standard properties of  $c'(\alpha t) > 0$ ,  $c''(\alpha t) > 0$ , and  $c'(0) = 0$ .

Let  $\bar{\alpha}_1$  and  $\bar{\alpha}_2$  denote the labor market's conjectures of  $\alpha_1$  and  $\alpha_2$ , respectively, while  $z_1$  and  $z_2$  represent the market's conjectures of unmanaged earnings, defined as:

$$z_1 \equiv x_1 - \bar{\alpha}_1 = \tilde{\eta} + \varepsilon_1, \tag{11}$$

$$z_2 \equiv x_1 - \bar{\alpha}_2 + \lambda\bar{\alpha}_1 = \tilde{\eta} + \varepsilon_2. \tag{12}$$

We apply the standard belief updating formula<sup>8</sup> to obtain the conditional mean of normally distributed  $\tilde{\eta}$ , given  $z1$  and  $z2$  to be as follows:<sup>9</sup>

$$E(\tilde{\eta}|(z1, z2)) = m0 + \frac{h\varepsilon}{h0 + 2h\varepsilon}(z1 + z2 - 2m0). \tag{13}$$

Thus, the market begins with prior  $m0$ , and adjusts its beliefs about  $\tilde{\eta}$  based upon the information conveyed by  $z1$  and  $z2$ .

Applying Equation (13), we can express  $w3$  as follows:

$$w3(x1, x2) = E(\tilde{\eta}|x1, x2) = m2 = m0 + \frac{h\varepsilon}{h0 + 2h\varepsilon}(x1 + x2 - \alpha2 + (\lambda - 1)\alpha1 - 2m0). \tag{14}$$

Moreover,  $w2$  and  $w1$  can be written as:

$$w2(x1) = E(\tilde{\eta}|x1) = m1 = \frac{h0m0 + h\varepsilon(x1 - \bar{\alpha}1)}{h0 + h\varepsilon}, \tag{15}$$

$$w1 = E(\tilde{\eta}/prior) = m0, \tag{16}$$

where we rely on the standard belief updating formula for the substitution of  $E(\tilde{\eta}|x1) = m0 + \frac{h\varepsilon}{h0+h\varepsilon}(z1 - m0)$  into Equation (15).

The sequence  $\{m0, m1, m2\}$  represents the market’s updated beliefs about the manager’s ability over time. In particular,  $m1$  and  $m2$  can be rewritten as follows:

$$m1 = \frac{h0m0+h\varepsilon(x1-\bar{\alpha}1)}{h0+h\varepsilon} = \frac{h0}{h0+h\varepsilon}m0 + \frac{h\varepsilon}{h0+h\varepsilon}(x1 - \bar{\alpha}1) \text{ and}$$

$$m2 = m0 + \frac{h\varepsilon}{h0+2h\varepsilon}(x1 + x2 - \bar{\alpha}2 + (\lambda - 1)\bar{\alpha}1 - 2m0) = \frac{h0+h\varepsilon}{h0+2h\varepsilon}m1 + \frac{h\varepsilon}{h0+2h\varepsilon}(x2 - \bar{\alpha}2 + \lambda\bar{\alpha}1).$$

This clearly shows that, at each period, the market uses a weighted average of the last period’s belief,  $mt-1$ , and the new information revealed during the current period (i.e., the unmanaged earnings) in order to form its new belief,  $mt$ . Consequently, establishing a good reputation early on will have a long-lasting effect on the manager’s wages (i.e., utility). A similar insight is gained from Equations (14) and (15), wherein the Period 1 earnings management,  $\alpha1$ , increases both  $w2$  and  $w3$  via  $x1$ , whereas the Period 2 earnings management,  $\alpha2$ , only increases  $w3$  (via  $x2$ ). In other words, early-stage manipulations pay off more than later-stage manipulations. Thus, similar to the classic career concerns model, up to this point in our model managers have incentives to engage in more earnings manipulations at the early stages of their careers.

In contrast to Holmstrom (1982, 1999), however,  $\alpha1$  in our model reverses in Period 2, thereby decreasing Period 2 earnings ( $x2$ ), which in turn lowers Period 3 wages ( $w3$ ). This subsequent period reversal effect thereby becomes an offsetting factor to the traditional career concerns incentives, and the overall effect of the two offsetting forces generates different predictions relative to Holmstrom (1982, 1999) under various assumptions regarding  $\lambda$  (i.e., alternatively the rate of accruals reversal or the intensity of the value destruction of the real activities manipulations).

To solve the model, we use the “sequential rationality” implied by a Perfect Bayesian Equilibrium. At the beginning of Period 2, after  $w2$  is paid, the manager chooses  $\alpha2$  to maximize  $E\{-c(\alpha2) + w3\}$ . Using (14), we have the following first-order condition:

$$-c'(\alpha2) + \frac{h\varepsilon}{h0 + 2h\varepsilon} = 0, \tag{17}$$

which in turn implies the closed-form solution:

$$c'(\alpha2^*) = \frac{h\varepsilon}{h0 + 2h\varepsilon}. \tag{18}$$

The first-order condition (FOC) with respect to  $\alpha1$  is:

$$\frac{\partial U}{\partial \alpha1} = -c'(\alpha1) + \frac{h\varepsilon}{h0 + h\varepsilon} + \frac{h\varepsilon}{h0 + 2h\varepsilon}(1 - \lambda), \tag{19}$$

<sup>8</sup>See, e.g., Greene’s (1997) Theorem 3.6 on the marginal and conditional normal distributions.

<sup>9</sup>For the sake of parsimony, we do not define the variance here because it is not relevant to our model.

which yields the closed-form solution:

$$c'(\alpha_1^*) = \frac{h_\varepsilon}{h_0 + h_\varepsilon} + \frac{h_\varepsilon}{h_0 + 2h_\varepsilon} (1 - \lambda). \tag{20}$$

Equations (18) and (20) guarantee a maximum value for the objective function given that the second-order conditions are satisfied. Furthermore, we note that Equation (20) is just a marginal cost equals marginal benefit condition, with the left-hand side term  $c'(\alpha_1)$  representing the marginal cost (i.e., disutility) of  $\alpha_1$  due to the convex cost of earnings management. The first item on the right-hand side,  $\frac{h_\varepsilon}{h_0 + h_\varepsilon}$ , represents the marginal utility of  $\alpha_1$  through its impact on  $w_2$ , while the second term,  $\frac{h_\varepsilon}{h_0 + 2h_\varepsilon} (1 - \lambda)$ , represents the marginal utility of  $\alpha_1$  through its impact on  $w_3$ . It is worth mentioning that while the first term,  $\frac{h_\varepsilon}{h_0 + h_\varepsilon}$ , is always positive, the sign and the magnitude of the second term critically depend upon the rate of reversal of the accruals or the intensity of the value destruction of the real activities manipulations,  $\lambda$ .

### 2.3. Interpretation of optimal earnings management levels

We now discuss and interpret the optimal levels of earnings management in Periods 1 and 2,  $\alpha_1^*$  and  $\alpha_2^*$ , respectively, for each of the two cases of earnings management based on accruals and real activities manipulation.

#### Case 1—Accruals: $\lambda \leq 1$

The case of  $\lambda \leq 1$  implies a partial or full reversal of Period 1 earnings management activities in Period 2, and is thus applicable to accrual-channeled earnings management. If  $\lambda \leq 1$ , then from (18) and (20), we have:  $c'(\alpha_1^*) > c'(\alpha_2^*)$ , which immediately implies  $\alpha_1^* > \alpha_2^*$ . Under this scenario, where the reversal effect is at most dollar-for-dollar, our model yields predictions that are similar to those of the classic Holmstrom career concerns model: managers will manipulate earnings more when they are young in order to enhance the labor market’s perceptions of their abilities.

#### Case 2—Real Activities: $\lambda > 1$

In contrast to accrual earnings management, earnings management based on real activity manipulations involves managers taking actions to adjust the timing and/or scale of the firm’s underlying business activities away from their optimal level. Alternatively stated, these activities are value-destroying. The negative impact in Period 2 is therefore a multiple of the Period 1 earnings management based on real activities manipulation.

##### Sub-case 2.1: $1 < \lambda < 1 + \frac{h_\varepsilon}{h_0 + h_\varepsilon}$

Under this scenario, the second term on the right-hand side of Equation (20) becomes negative, thereby dampening the magnitude of  $\alpha_1^*$ . However, since the intensity of value destruction,  $\lambda$ , is moderate, the negative impact of the first period’s earnings management,  $\alpha_1$ , on the third period’s wages,  $w_3$  (i.e., the second term on the right-hand side of Equation (20)), is insufficient to dominate the positive impact of  $\alpha_1$  on the second period’s wages,  $w_2$  (i.e., the first term on the right-hand side of Equation (20)). So,  $c'(\alpha_1^*) > c'(\alpha_2^*)$  still holds and therefore  $\alpha_1^* > \alpha_2^*$ . This suggests that, provided that the real activities manipulations are not *overly* value-destroying, younger managers’ desire to manage earnings in the early stages of their careers in order to impress the labor market will remain dominant. In other words, managers’ concerns about the value-destroying effects of the first period’s real activities manipulations will be insufficient to overturn the standard career concerns result of higher engagement in earnings management during the early career stage.

##### Sub-case 2.2: $1 < \lambda = 1 + \frac{h_\varepsilon}{h_0 + h_\varepsilon}$

Under this scenario,  $c'(\alpha_1^*) = c'(\alpha_2^*)$ , implying  $\alpha_1^* = \alpha_2^*$ . Thus, when the value-destroying effect of a particular real earnings management activity reaches a specific threshold, a younger manager exerts neither more nor less earnings management in the earlier versus later career stages. This is the tipping point at which the two offsetting

forces of early gains and subsequent value destruction balance out. Beyond this point, a result opposite to that of the traditional Holmstrom model's prediction will prevail, as shown below.

Sub-case 2.3:  $1 + \frac{h_\varepsilon}{h_0+h_\varepsilon} < \lambda < 1 + \frac{h_0+2h_\varepsilon}{h_0+h_\varepsilon}$

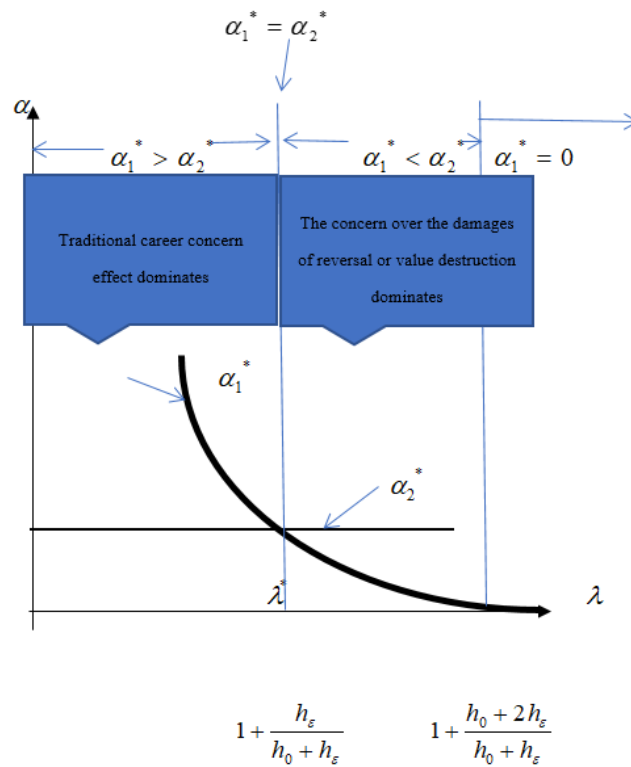
Under this scenario,  $0 < c'(\alpha_1^*) < c'(\alpha_2^*)$ , leading to  $0 < \alpha_1^* < \alpha_2^*$ . In other words, when earnings management based on real activities manipulations is more intensely value-destroying, the younger manager's desire to impress the labor market yields to her concerns regarding the anticipated value destruction in the second stage of her career. These results therefore run contrary to the standard career concerns model in that, when the value destruction of real activities manipulations is sufficiently intensive, managers will engage in *fewer* real activities manipulations when they are young.

Sub-case 2.4:  $1 + \frac{h_0+2h_\varepsilon}{h_0+h_\varepsilon} \leq \lambda$

In this case,  $c'(\alpha_1^*) \leq 0$ , leading to the corner solution of  $\alpha_1^* = 0$ . In this situation, where earnings management based on real activities manipulations is extremely value-destroying, younger managers will refrain from engaging in any such activity because even low levels of this kind of earnings management will lead to a loss of utility.

### 2.4. Discussion

The key insight from our model is that the extent to which the predictions of the traditional career concerns model prevail in an earnings management setting (i.e., whether the manager undertakes more earnings management in their early years relative to their later years) is critically dependent upon  $\lambda$ , the rate at which the Period 1 earnings management reverses or leads to value destruction. Figure 1 provides a graphical depiction of this relation between  $\lambda$  and the equilibrium levels of earnings management at different career stages (i.e.,  $\alpha_1^*$  and  $\alpha_2^*$ ).



**Figure 1** The earnings management levels at equilibrium ( $\alpha$ ) versus the magnitude of accruals management reversal or intensity of value destruction of earnings management based on real activities manipulations ( $\lambda$ ).



As shown, for any value of  $\lambda$  less than  $\lambda^* = 1 + \frac{h_\varepsilon}{h_0+h_\varepsilon}$ , the traditional career concerns effect dominates, meaning that managers engage in more income-increasing accruals or real activities manipulations when they are young. The opposite prediction holds, however, once the value of  $\lambda$  exceeds the tipping point,  $\lambda^*$ . Beyond this point, the manager's concerns over the negative impact of value destruction on her *future wage* dominate her desire to signal her quality to the labor market in the early years such that the younger manager will engage in less of this type of earnings management. Once  $\lambda$  reaches  $1 + (h_0 + 2h_\varepsilon)/(h_0 + h_\varepsilon)$ , these concerns become so prohibitive that the manager does not engage in *any* real activities manipulations in her early years.

We make two additional observations regarding the model. First, while the optimal amount of earnings management in Period 1,  $\alpha_1^*$ , monotonically decreases with  $\lambda$ , the optimal amount of earnings management in Period 2,  $\alpha_2^*$ , is a constant that is independent of  $\lambda$ .

Second, it is interesting to note that the magnitude of the tipping point,  $\lambda^* = 1 + \frac{h_\varepsilon}{h_0+h_\varepsilon}$ , is negatively related to the ratio of the precision of prior information to the precision of new information ( $\frac{h_0}{h_\varepsilon}$ ). Intuitively, greater values of  $h_0$  relative to  $h_\varepsilon$  imply that priors are relatively more informative than new information, and thus new information does not weigh heavily in the market's assessment of the manager's quality. Accordingly, when the market has more (less) precise prior information and less (more) precise new information, there is less (more) propensity for the manager to engage in earnings management activities in order to influence the labor market's perceptions. Accordingly, a smaller (bigger) value of  $\lambda^*$  is needed to reach the tipping point.

### 3. Conclusions

We analytically investigated the impact of managers' career concerns on their earnings management decisions. Building upon the classic work of Holmstrom (1982, 1999), we incorporated the reversing feature of accruals and the value-destroying properties of earnings management based on real activities manipulations to generate important predictions. The key result deriving from our model is that not all earnings management activities are created equal. Settings in which the magnitude of a particular earnings management reversal or the intensity of its ensuing value destruction is smaller yield outcomes that are similar to the traditional career concerns result wherein the manager will engage in more earnings manipulations in the early stage of her career. By contrast, settings in which earnings management based on real activities manipulations is relatively more value-destroying lead to opposite predictions compared to those of the classic Holmstrom model, as our model suggests that managers will engage in *less* real activities manipulations in their early career stage. Our findings are novel to the literature and help to bridge the disconnect between survey evidence documenting that executives prioritize implicit contracting (i.e., labor market-based career concerns) when making earnings management decisions (Graham et al., 2005) and the extant literature's focus on explicit contracting as an explanation for earnings management.

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