CEO option wealth and firm risk-taking: An analysis of multiple reference points

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The behavioral agency literature focusing on how CEO stock option gains impact risk taking generates mixed findings, showing positive effect in some studies and negative effect in others. We reconcile this equivocality by introducing the pay reference point which delineates CEO options into both negative and positive deviation contexts. Building on the behavioral agency model and the myopic loss aversion concept derived from the theory of intertemporal preferences we conceptualize how pay reference points of CEO current and future option wealth directly affect risk taking and how bankruptcy likelihood and slack moderate this relationship. We suggest risk taking increases when both option wealth types are in a negative deviation context because CEOs strive to improve performance. In a positive deviation context, current wealth reduces risk taking as CEOs seek to protect their options but future wealth increases risk taking due to a longer option payoff horizon. For CEOs holding current and future option wealth, we argue bankruptcy likelihood weakens and amplifies risk taking respectively in the negative deviation context while slack facilitates risk taking in the positive deviation context. Empirical testing using a manufacturing panel dataset largely supports our hypotheses.

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Introduction

Engaging in risk taking is fundamental to an organization’s survival and competitiveness (Shapira, 1995). Firms must be willing to act amidst uncertainty (Knight, 1921) due to its critical role in generating shareholder value (Datta et al., 2001). Unsurprisingly, for many decades scholars and practitioners have been interested in the determinants of value maximizing risk taking actions. One factor commonly identified to predict risk taking is executive compensation, an incentive alignment mechanism touted to mitigate misalignment of risk preferences.

The behavioral agency model has recently served as a useful theoretical perspective to explain the relationship between executive compensation and risk taking. Its central premise is that a decision-maker uses a reference point to frame problems as gains or losses, which influences individual risk preferences (Wiseman and Gomez-Mejia, 1998). Although the role of the reference point has been well studied in various contexts, its function regarding CEO incentive pay is theoretically underdeveloped. Investigating pay reference points is important as research has devoted significantly less attention to understanding the benchmarks CEOs use to assess changes in their incentive values (Koop and Johnson, 2010). The dearth of research on pay reference points in both compensation and behavioral literatures is troubling in light of recent studies showing stock option value relative to a psychological reference point matters (Heath et al., 1999; Bahaji, 2011; Lefebvre and Vieider, 2014; Lim, 2015).

Several studies have made some research progress toward filling this literature gap by examining how CEO exercisable and unexercisable options values (as reflected in the firm’s stock price relative to the exercise price reference point) affect risk taking (Larraza-Kintana et al., 2007; Martin et al., 2013; Devers et al., 2008). While this small body of work has enriched our understanding of incentive pay effects, there are conflicting findings. For instance, Larraza-Kintana et al. (2007) found a negative effect of unexercised positively-valued stock option on risk taking whereas Devers et al. (2008) showed a positive

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effect. These contrasting patterns may be attributed to the behavioral agency model focusing only on the positive deviation context of CEO option (when option value exceeds the reference point).\(^1\) Failure to also consider the negative deviation context (when option value falls below the reference point) might have led to the empirical inconsistencies.

In the interest of reconciling these equivocal findings and recognizing "[executives] may use reference points other than the exercise price" (Holmes et al., 2011, 1082), we build on the behavioral agency model and the myopic loss aversion concept based on the theory of intertemporal preferences to reanalyze the incentive pay effects on risk taking referred to as managerial decisions about uncertain investments that might negatively affect performance (Palmer and Wiseman, 1999). We do so by examining both negative and positive deviation contexts of CEO option wealth to explain why decision-makers might shift between risk seeking and risk averse behaviors. To achieve this objective we conceptualize the pay reference point which we define as the accumulated CEO option value in the prior year that CEOs use as a yardstick to compare against the accumulated option value in the current year (i.e., relative self-referent pay).\(^2\)

Our theoretical framework seeks to revise theoretical understanding by suggesting that the influences of two types of option wealth — current and future wealth — and their associated pay reference points exert unanticipated effects on risk taking decisions.\(^3\) Current option wealth refers to endowed accumulated values of exercisable stock options that are immediately accessible, whereas future option wealth reflects accumulated unexercisable stock options whose values can only be captured in the future.\(^4\) It is critical to understand the temporal differences between current and future wealth because managers may have varying expectations regarding the vesting horizons of options. Using exercisable and unexercisable options as our contexts, we propose that both current and future wealth below the pay reference point increases risk taking in an attempt to reach the targeted benchmark. We also argue that current wealth above the pay reference point decreases risk taking to protect the exercisable options, but future wealth above the pay reference point increases risk taking due to longer pay horizon of unexercisable options.

Incentive pay effects on risk taking do not occur in a vacuum and can be influenced by contingencies (Devers et al., 2007a; Gomez-Mejia and Wiseman, 1997). We enrich our framework by considering bankruptcy likelihood (survival point) and organizational slack (slack point) as moderators (March and Shapira, 1987, 1992). Bankruptcy likelihood referring to the probability of decline within two years is expected to generate outcomes contingent on the vesting horizon of option by inducing threat-rigidity response among CEOs with current wealth but enhancing risk taking among CEOs with future wealth. Slack representing excess resources acts as buffer against adversity, and is anticipated to act jointly with relative current and future wealth by attenuating risk aversion and enhancing risk seeking, respectively. We focus on bankruptcy likelihood and slack because decision-makers experiencing ruinous losses may direct their attention to the survival point that could influence CEO option wealth, whereas those facing accumulated resources may leverage on the slack point to enhance their current wealth. Accordingly, bankruptcy likelihood and slack may have the potential to change the veracity of fundamental behavioral assumptions regarding the effects of CEO option pay reference points on risk taking decisions.

Our study offers three important contributions to the literature. First, our central claim is that pay reference points are theoretically important. Although studies have investigated the reference points of performance (e.g., Miller and Chen, 2004; Greve, 2003a; Iyer and Miller, 2008; Lim and McCann, 2014), restricted stock (Lim, 2015), board pay (Lim and McCann, 2013), and firm size (Greve, 2008), ours is likely one of the first to explore relative self-referent points of CEO stock options. The concept of pay reference point reflected in the collective set of main effect hypotheses is theoretically useful as it has greater power to explain a wider spectrum of risk outcomes in response to options across both negative and positive deviation contexts. Illustrated by a kink in the curve (i.e., different slopes) that delineates into negative and positive deviation contexts, our findings provide empirical evidence for the behavioral importance and relevance of pay reference points. This kinked-curve relationship explains why we observe risk-seeking and risk-averse behaviors in response to CEO options, thereby reconciling the conflicting findings in the literature that has placed heavy emphasis on the positive deviation context of CEO stock options.

Second, by theorizing and testing how pay reference point effects might differ for various types of options we gain richer theoretical insights into the intertemporal relationship between CEO option wealth and risk taking. Our findings show that the time horizons during which CEOs can gain access to their exercisable and unexercisable option values matter in influencing risk preferences. Behavioral agency model assumes agents are universally risk averse in a positive deviation context close to the reference point, and our findings confirm this conventional wisdom by showing that CEO current wealth with a

\(^1\) The original behavioral agency formulation assumes that option exercise price serving as a reference point drives risk-taking behaviors. When current stock price rises above the option exercise price, CEOs perceive a positive deviation context that creates risk aversion. If the reference point shifts upward, it becomes more difficult to achieve the target, resulting in a smaller positive deviation context that drives risk seeking (Wiseman and Gomez-Mejia, 1998; Holmes et al., 2011); however, the underlying construct in this case is not a negative deviation context per se, rather it is a higher target setting that decreases the probability of a perceived positive deviation context.

\(^2\) In our context, pay reference point refers to the accumulated value of option at time \(t-2\) serving as comparison benchmark for current option value at time \(t-1\). While performance feedback studies have examined both social and historical reference points, we place emphasis on the historical pay reference point of CEO option wealth to maintain a reasonable research scope.

\(^3\) Although Martin et al. (2013) examined both current and prospective wealth effects on strategic risk taking their research did not investigate pay reference points whereas our work does.

\(^4\) Future wealth differs from Martin et al.’s (2013) concept of prospective wealth in that the latter refers to potential increases in option wealth beyond current wealth due to future stock price increases in the CEO’s entire holdings of exercisable and unexercisable option. In contrast, future wealth characterizes unexercisable option wealth accessible at a future date.

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