CEO RISK-TAKING AND SOCIOEMOTIONAL WEALTH: THE BEHAVIORAL AGENCY MODEL, FAMILY CONTROL, AND CEO OPTION WEALTH

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Abstract

We combine behavioral agency and family business literature to analyze the role of dominant firm principals in constraining the managerial agent’s (CEO’s) response to equity-based pay. Behavioral agency research has made progress in understanding CEO risk behavior in response to equity-based incentives and family firm risk behavior driven by concentrated socioemotional and financial firm-specific risk bearing. However, both literatures have evolved independently, which has limited our understanding of how the risk bearing of agent and principal influence the predictions of the behavioral agency model (BAM). We combine these literatures in order to enhance BAM’s predictive validity with regard to firm risk-taking as a function of both agent and principal risk preferences. Our findings suggest that family principals are more likely than non-family principals to constrain CEO risk behavior that is perceived as immoderate (excessively risk-averse or excessively risk-seeking). We also offer evidence that CEO ties to the family influence the CEO’s response to equity based incentives. In doing so, we offer refinements to BAM’s formulation and advance our understanding of the unique nature of agency problems within family firms.

Keywords: behavioral agency, family principal, socioemotional wealth, agent risk-taking, mixed gamble
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Firm risk-taking is a core variable of interest in most business fields under the general presumption that an appropriate level of risk is necessary to obtain superior returns (Miller & Bromiley, 1990; Sanders & Hambrick, 2007). Much of this literature focuses on the CEO as the key decision maker who takes risks on behalf of the firm in response to the incentive features of the agency contract (e.g., Sanders, 2001; Devers, McNamara, Wiseman, & Arrfelt, 2008; Larraza-Kintana, Wiseman, Gomez-Mejia, & Welbourne, 2007). The classical agency model argues that equity ownership encourages risk-averse CEOs to take more risk in their strategic choices, with the expectation that such choices tend to enhance the value of their equity in the firm (Dalton, Hitt, Certo, & Dalton, 2007). In contrast, the behavioral agency model (BAM), which combines elements of prospect and agency theory, predicts that the accumulated value of stock options previously awarded to CEOs creates risk bearing (perceived wealth-at-risk) and, given loss aversion (the preference for loss avoidance over the pursuit of gains; Kahneman & Tversky, 1979), this makes the CEO more reluctant to take risks (Wiseman & Gomez-Mejia, 1998; Denya, Gomez-Mejia, DeCastro, & Wiseman, 2005). A more recent refinement of BAM by Martin, Gomez-Mejia, and Wiseman (2013) proposes that CEOs balance the fear of losing current endowed option wealth (which produces risk aversion) with the prospect of enhancing the value of their future wealth by taking more risks (what these authors refer to as the mixed gamble inherent in equity-based incentives, which is empirically supported in their research).

In parallel to the study of agent risk preferences, BAM has also been used by some scholars to examine the unique risk bearing (and risk preferences) of family principals, where the firm-specific endowment of family owners includes a combination of financial and socioemotional wealth (SEW), with the latter defined as “the stock of affect related value the
family has invested in the firm” (Gomez-Mejia et al., 2007: 107). According to this literature, the dual set of utilities of family principals—that is, financial and socioemotional, as opposed to the singular focus on financial risk bearing by non-family principals—serves to explain differences in the risk bearing and risk preferences of family firms relative to non-family firms. In turn, the additional socioemotional risk bearing of family principals explains differences in strategic choices relative to non-family principals, such as choices regarding acquisitions (Gomez-Mejia, Patel, & Zellweger, 2016), diversification (Gomez-Mejia, Makri, & Larraza-Kintana, 2010), R&D investments (Chrisman & Patel, 2012; Gomez-Mejia, Campbell, Martin, Hoskisson, Makri, & Sirmon, 2014), pollution control and prevention efforts (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010), and divestitures (Feldman, Amit, & Villalonga, 2014; Zellweger, Kellermanns, Chrisman, & Chua, 2012). This additional risk bearing of family principals along with their control over board appointments and management has also been used to explain why they have stronger incentives and capacity to monitor their CEOs relative to principals at non-family firms, creating a monitoring advantage at family firms relative to non-family firms (Anderson & Reeb, 2003; Gomez-Mejia et al., 2003; Martin et al., 2016; Shleifer & Vishny, 1986).

There has been little attempt to integrate these parallel streams of behavioral research in order to understand how the risk bearing of family principals (in the form of financial and SEW considerations) influences BAM’s hypothesized CEO (agent) risk-taking in response to equity-based incentives. In this research, we bridge the study of agent and family principal risk preferences by arguing that BAM’s predicted CEO response to risk bearing associated with stock options is likely to vary by ownership structure. The family firm’s principals are subject to the same institutional and labor market pressures as their non-family counterparts when designing
compensation contracts for their CEOs. That is, if family owners do not include stock and/or stock options in their CEO’s compensation contract, they are likely to: (1) violate prevailing institutional norms, whereby this compensation form has become standard, representing the majority of the total pay package of the typical CEO (Tuschke & Sanders, 2003; Nyberg, Smithey Fulmer, Gerhart, & Carpenter, 2010); (2) find it difficult to attract and retain high quality CEOs who expect to receive this incentive form (Seo, Perry, Tomczyk, & Solomon, 2014), which ultimately may have a negative influence on firm performance (Hambrick & Quigley, 2014); and (3) have less capacity for punishing the CEO for poor decision making that results in lower share value (Core & Guay, 2010). Given these pressures to provide equity based pay to top executives, avoidance of these incentives is not a viable option and thus, family owners must monitor their CEOs closely to ensure their actions are consistent with the family’s risk preferences. We suggest that the family owners’ higher risk bearing and monitoring advantage lead them to constrain the following behaviors that may be incentivized by stock options: (1) excessive CEO risk aversion (in trying to protect current option wealth), and (2) excessive CEO risk seeking (in the pursuit of prospective option wealth). Thus, we advance the notion of CEO constraint by family principals, due to the family’s risk preferences diverging from those of the CEO. This is an unobserved theoretical construct used to explicate the extent to which CEO risk taking behavior in response to the incentive system differs, as hypothesized, between family and non-family controlled firms.

In order to help explain family firm heterogeneity in the discretion their CEOs enjoy when responding to option plans (as predicted by BAM), we also argue that CEO ties to the family influence the CEO’s response to equity based incentives. We further argue that BAM’s focus on the CEO as decision maker needs to be tempered by considering both the risk
preferences of the dominant principal – who may use its monitoring capacity and influence within the firm to constrain the CEO’s response to the incentive system – and the family CEO’s tendency to make strategic decisions that fall in line with the family owners’ risk preferences.

We offer two related yet important unique contributions to these literatures. First, we refine BAM’s predictions with regard to agent (CEO) risk taking by demonstrating the influence of the firm’s ownership structure, whereby CEO risk taking response to the incentive system – postulated by BAM – depends on the risk preferences of dominant owners. Our core hypotheses, supported by empirical findings, suggest that family principals’ acquiescence in, or constraint of CEO behaviors (predicted by BAM) depends on the relative alignment or misalignment of agent risk preferences with the family’s risk preferences. While constraints imposed upon the CEO by firm principals is unobservable as a theoretical mechanism, we interpret the presence of differences in how CEOs respond to the incentive system (at family relative to non-family firms) as inferential evidence that such constraints are in place when family principals are at the helm.

One broad implication of our study is that the linkage between monitoring and incentive alignment appears to vary depending on the motives of the dominant principal. Our empirically supported theory proposes that under family ownership, close monitoring by family principals may constrain the expected influence of the incentive alignment system on CEO strategic choices when CEO and family risk preferences diverge. As a result, it is possible that family firms may be less risk averse than non-family firms in situations where the CEO of a non-family firm has engaged in excessive risk bearing in response to the CEO’s current option wealth, which our theory suggests is likely to be constrained by family principals. This adds texture to the paradigm that family firms are generally more risk averse than non-family firms (eg., Anderson & Reeb, 2003; Fan & Wong, 2002; Gomez-Mejia, Nuñez-Nickel, & Gutierrez, 2001; Gomez-
Mejia et al., 2010). These advancements in understanding the unique nature of family firm agency problems and risk preferences are likely to be of great interest to family business and corporate governance scholars alike given the pervasiveness of this ownership form.

Second, our findings are consistent with the notion that family principals’ inclination to constrain the CEO’s response to equity incentives is dependent upon family exposure (or vulnerability) to socioemotional and financial losses that are a potential consequence of the CEO’s excessive risk behavior. Prior research on BAM has focused on CEOs’ vulnerability to losses when responding to incentives (c.f., Martin, Campbell, & Gomez-Mejia, 2016) without considering the concurrent vulnerability of utilities subject to losses important to dominant principals. We shift this focus by examining the risk bearing of family principals relative to their CEOs and the resulting constraints upon CEO response to option incentives at family firms. We argue that family principals bear higher risk than CEOs and non-family shareholders, given family vulnerability to both socioemotional and financial losses. The unique socioemotional risk bearing of family firms shapes their motivation to constrain CEO’s strategic choices in response to option incentives leading to significant differences in risk behavior of family firms relative to non-family firms.

THEORY AND HYPOTHESES

The Behavioral Agency Model, CEO Incentives, and Firm Risk-Taking

An agency relationship exists whenever “one party (the principal) delegates work to another (the agent), who performs that work” (Eisenhardt, 1989: 545). In the specific case of publicly traded firms, the relationship between shareholders (as principals) and CEOs (as agents) is characterized by “physical and emotional distance between the parties” (Cruz, Gomez-Mejia, & Becerra, 2010: 70) and is formalized by the medium of a contract (Jensen & Meckling, 1976).
According to traditional agency writings, because CEOs’ (or agents’) personal wealth and reputation are tightly connected to the firm, they have significant firm-specific wealth and are considered risk averse (Eisenhardt, 1989). On the other hand, shareholders (or principals) are considered risk-neutral as they can diversify their portfolios in order to protect themselves against major financial risks. As high economic returns are usually associated with taking major risks (Fama & French, 1992), diversified principals are assumed to prefer riskier strategic actions by individual firms in order to maximize their portfolio’s overall financial returns. The resulting divergence in the risk profiles of principal and agent requires governance mechanisms to limit the resulting costs imposed upon shareholders by executives unlikely to adopt a “high risk/high return” strategy (Shavell, 1979). Outcome-based contracts have been proposed as a potential solution to this agency problem, with equity-based compensation being a preferred means of creating so-called incentive alignment or the prospects of “win/win” situations for CEOs and shareholders (Jensen & Murphy, 1991; Nyberg et al., 2010).

By combining elements from traditional agency theory with behavioral research examining decision-making under risk, BAM challenges the assumption of fixed CEO risk-taking preferences. Specifically, utilizing the concepts of loss aversion and risk bearing from behavioral research (March & Shapira, 1992; Bazerman, 1994; Kahneman & Tversky, 1979; Tversky & Kahneman, 1991), BAM proposes that CEOs’ risk preferences are context-dependent and that their risk bearing (wealth-at-risk) will negatively influence risk-taking (Wiseman & Gomez-Mejia, 1998; Gomez-Mejia, Welbourne & Wiseman, 2000). Accordingly, based on the assumption that agents are loss averse, BAM hypothesizes that CEOs are predisposed to take greater risk in order to prevent possible wealth losses and avoid risk-taking in order to minimize
the loss of wealth that is considered assured (Larraza-Kintana et al., 2007; Wiseman & Gomez-Mejia, 1998).

While there is some support for BAM’s prediction that agent risk bearing as a result of endowed wealth will negatively influence risk-taking (Sanders, 2001; Larraza-Kintana et al., 2007; Devers et al., 2008), the original version of BAM overlooks the possibility that the potential for positive changes in the firm’s stock price, and thus the value of the CEO’s stock options, may motivate the CEO to take further risks. To account for this possibility, a refinement of BAM by Martin and colleagues (2013)—building on Bromiley’s (2010) notion of mixed gambles—notes that CEOs should be aware of the potential for both gains and losses to option wealth when making strategic decisions. On the one hand, the agent (or CEO) could lose accumulated equity (current wealth) if risk taking fails, which would tend to promote risk averse strategic choices. Yet on the other hand, the agent could further increase the value of equity wealth if risk taking is successful (prospective wealth), which would tend to foster higher-risk strategies. This dynamic reflects the logic that the vast majority of strategic decisions will have the potential to both negatively and positively influence the firm’s stock price. This theoretical refinement of BAM maintains the logic of loss aversion (that individuals prefer loss prevention to the pursuit of gains), yet suggests that the agent’s conservatism will be attenuated by the prospect of increasing wealth in the future as they place greater weight on the loss of opportunity for high returns than the actual risk associated with it. Martin and colleagues (2013) provide empirical support for this refinement in the context of CEO option wealth and strategic risk-taking.

We conclude from the above review of behavioral agency research that CEOs are prone to manage firm risk to (1) protect their personal wealth, becoming more risk-averse, or (2)
enhance their prospects of greater future wealth, becoming more risk-seeking (scholars such as Jensen & Meckling [1976] and Nyberg et al. [2010] espouse the latter as a primary intended objective of awarding the agent with equity pay). However, what is missing from this theoretical framework is the possible intervention of dominant principals who, in response to their idiosyncratic risk bearing, might weaken or strengthen the predicted behavioral effect of the agent’s current or prospective wealth. Next, we attend to this issue by discussing the influence of family principals in curbing or allowing CEOs’ discretionary risk behavior in response to equity-based pay.

**Behavioral Agency, Family Control and Socioemotional Wealth**

Gomez-Mejia and colleagues (2007, 2010, 2011) developed a “socioemotional wealth model” as a general extension of BAM to explain decision-making in family firms. According to this model, that has become prominent within family firm research (Schulze & Kellermanns, 2015), family owners face dual SEW and economic reference points when framing contexts of gains and/or losses. Because SEW depends on the economic viability of the firm, family owners should be motivated to make economically driven decisions designed to both preserve the overall stock of SEW and ensure the family’s economic sustenance. For instance, under financial distress the family firm may boost R&D investments even if this implies dependence on experts from outside the family circle (Gomez-Mejia, Chirico, Nordqvist, & Hellerstedt, 2017), engage in greater diversification which dilutes family influence (Gomez-Mejia et al., 2010), join a co-op which gives power to an external party (Gomez-Mejia et al., 2007), or replace a long-tenured family CEO with someone from outside the family (Gomez-Mejia et al., 2001).

Clearly there is an interdependence between economic and SEW objectives, given family firm attachment to the firm is lost in the event of financial failure (Chua, Chrisman, & De
Massis, 2015; Martin & Gomez-Mejia, 2016; Miller & Le-Breton-Miller, 2014; Schulze & Kellermann, 2015). Berrone, Cruz, and Gomez-Mejia (2012) noted that while the enjoyment of family control is a fundamental aspect of SEW, this tends to be more short-term-oriented. Thus, for instance, to retain control the family may neglect lucrative opportunities such as joining a co-op (Gomez-Mejia et al., 2007) or avoid investing in R&D (which increases information asymmetries for the family; Gomez-Mejia et al., 2014). Other elements of SEW—such as dynastic succession, maintenance of binding social ties within the firm, the perpetuation of family identity embedded in the firm, and the continued exercise of control into the future—demand that the firm remain competitive in the long term and thus be able to survive (Chrisman & Patel, 2012). This requires risk-taking to capitalize on economic opportunities (for instance, by investing in R&D, increasing capital expenditures, or taking long-term debt to finance new projects), yet risk-taking by definition involves uncertainty; the expected benefits may not materialize due to a host of unknown factors, including bad luck, unpredictable environmental changes, and technological limitations. Thus, the challenge for family principals is to find a risk level whereby the firm takes sufficient but not excessive risks to improve its survival odds and avoid socioemotional and financial losses. This challenge must be met while also responding to the aforementioned institutional and labor market pressures that limit the family’s ability to remove equity incentives from the compensation contract. As a result, the family principal would need to consider the extent to which agent risk behaviors – induced by the incentive system – are congruent with the family’s risk preferences. If these are congruent—that is, if the risk preferences of family principals and the managerial agent are in alignment—one would expect the family to give managerial agents greater autonomy to respond (without constraint) to the incentive system; if not, the family may use its monitoring capacity to curtail an excessive risk
taking response by the agent (either on the risk-averse or the risk-seeking side) in an attempt to prevent catastrophic losses.

**Risk Bearing of Family Principals, Non-Family Principals and CEO**

There is mounting evidence that family firms’ risk preferences are likely to differ from non-family firms (see review by Gomez-Mejia et al., 2011). Compared to non-family shareholders (or principals), the family principal faces higher risk bearing and vulnerability to loss as a result of excessive CEO risk behavior (risk aversion or risk seeking) for three related reasons. First, the family has idiosyncratic firm-specific socioemotional endowment (Gomez-Mejia et al., 2007), which is less likely to be diversified relative to non-family principals who may benefit from high-risk/high-return strategies across all firms in their portfolio (Anderson & Reeb, 2003). Second, family owners face an additional difficulty if they choose to exit their investment in the firm, due to the presence of a “family handcuff” (Gomez-Mejia, Larrazà-Kintana, & Makri, 2003). As noted by Berrone and colleagues (2010: 87) “unlike individuals who hold a contractual relationship to the firm that is subject to rescission the value of socioemotional wealth to the family is more intrinsic, its preservation becomes an end it itself, and it is anchored at a deep psychological level among family owners whose identity is inextricably tied to the organization.” Lastly, the family’s fate is generally tied to a single organization, unlike diversified non-family shareholders; thus threats to the family firm may imply catastrophic losses (socioemotional and financial).

The family principal also bears more risk than agents who take risks on behalf of the firm for two reasons. First, the CEO is likely to have lower firm-specific risk bearing. That is, the CEO has the option to leave the firm and search for alternative employment possibilities, without the same emotional or economic downside than the family would face if it were forced to exit the
firm (Amit & Villalonga, 2014). For instance, CEOs are able to “jump ship” before the negative consequences of their decisions become clear (Gomez-Mejia, Berrone, & Franco-Santos, 2010).

On the contrary, as family owners’ fate is generally tied to the family firm’s future and the amount of their wealth-at-risk (socioemotional and financial) is higher, the size of their bet is also much larger. Second, CEOs can manage their loss exposure better than the family principal; for example, the CEO may uniquely have access to internal data suggesting that a new product launch may not be as successful as expected or that a crucial milestone may not be met (Mishra & McConaughy, 1999). Likewise, CEOs are less exposed to losses as they have greater latitude to manipulate reported earnings that affect the firm’s reported performance, as well as exercise unusually large amounts of options and shares during this period (Bergstresser and Philippon, 2006).

Family principals’ risk preferences are also likely to be more stable than that of their CEOs, given that both CEO risk aversion and risk seeking are significantly influenced by the share price, equity grants and in the case of prospective wealth, the passing of time. Share prices can change rapidly due to firm-specific, industry or macroeconomic factors, while equity grants are often annual which can significantly change the CEO current and prospective wealth and therefore their risk preferences (Martin et al., 2013). CEO current and prospective wealth – which are positively related to risk aversion and risk seeking respectively – are likely to be more volatile than family socioemotional endowments, given the latter is associated with their attachment to the firm and the utility deriving from dynastic succession, which are less prone to change significantly over time (Berrone et al., 2012). The more stable risk preferences of family principals are likely to further contribute to divergence of agent-principal risk preferences at family firms, leading the family principals to constrain CEO risk behavior.
We now develop hypotheses concerning family principals’ constraint of CEO risk-taking by analyzing the CEOs’ response to their option wealth (as predicted by BAM) and the alignment of that response with the family principals’ risk preferences.

**CEO Incentive System and Risk Preferences of Family**

We argue that family principals are more likely than non-family principals to be vigilant in monitoring CEO risk behaviors in order for the family firm to avoid excessive CEO risk taking or excessive CEO risk aversion that could lead to dual socioemotional and financial losses. This arises not only because of the family’s control over key appointments (e.g., power to select board members and senior executives) but also from the family’s drive to constrain CEO behaviors due to the aforementioned higher level of risk bearing (i.e., the combination of socioemotional and financial endowment vulnerable to losses). For instance, family members derive socioemotional benefit from dynastic succession, strengthening the motivation to closely supervise CEO and thus discourage strategic choices that may jeopardize long-term survival (Berrone et al., 2012; James, 1999). In short, we suggest that family principals will have a monitoring advantage and be more sensitive to both excessive CEO risk aversion and excessive CEO risk seeking in response to current and prospective wealth (respectively). Below, we will argue that monitoring advantage combined with aversion to excessive risk behavior provides important boundary conditions for BAM’s predictions when the family is a dominant owner.

**Constraining CEO risk behavior.** As noted earlier, the behavioral agency literature suggests that CEOs are expected to take fewer risks as their current option wealth increases (because their risk bearing rises with option wealth; Wiseman & Gomez-Mejia, 1998), yet they are prone to taking more risks if they anticipate that higher levels of option wealth (prospective wealth) may be forthcoming (Martin et al., 2013). Literature examining the performance
consequences of excessive risk aversion and excessive risk seeking underlines the performance risks created by these risk behaviors. The view that excessive risk aversion may place the firm at a long-term competitive disadvantage is well documented in the strategy literature, given the importance of strategic dynamism and the investments—with uncertain pay-offs—necessary to constantly adapt to a rapidly changing external environment (Teece, Pisano, & Shuen, 1997; Winter, 2003). The shareholder agency costs created by risk aversion have also been fundamental to agency scholars’ view that agents need to be incentivized to take more risks (Fama, 1980; Holmstrom, 1979). At the other end of the risk spectrum, excessive risk-seeking increases performance variance because of the inherently higher ex-ante uncertain nature of future outcomes associated with aggressive risks (Bromiley, Miller, & Rau, 2001; Sanders & Hambrick, 2007).

As per our prior discussion, for diversified non-family shareholders, excessive risk taking is less of a concern relative to shareholders with concentrated firm-specific investments – such as family owners – given that high-risk/high-return strategies are purported to increase the overall value of the firms in their portfolio (Baysinger & Hoskisson, 1990). Agent risk bearing in the form of their financial and human capital may also be lower than that of family owners because managerial agents have the option to search for another employer if future firm prospects appear to be poor due overly conservative (in response to current wealth) or overly aggressive (in response to prospective wealth) risk taking (Mishra & McConaughy, 1999). There is also the aforementioned information advantage and the possibility that they “jump ship” prior to negative consequences becoming visible (Gomez-Mejia et al., 2010; Wowak et al., 2017).

It is clear from the above that non-family principals and CEOs reduce the consequences of—or vulnerability to—firm-specific losses resulting from excessive conservatism or
aggression in strategic choices through diversification (by non-family principals) and alternative employment opportunities (for the CEO). Yet for family owners, as discussed earlier, excessive CEO risk aversion or excessive CEO risk seeking incentivized by stock options creates a vulnerability that is less easily mitigated, as a decline in firm performance may entail potentially catastrophic firm-specific socioemotional and financial losses. The socioemotional losses are likely to draw from various dimensions of family SEW proposed by Berrone and colleagues (2012), including: (1) dynastic succession, given performance declines reduce the probability that the business can be passed to the next generations; (2) emotional attachment of the family to their firm, meaning loss of the firm amounts to a significant emotional loss for family principals, as opposed to a business write-off for more diversified non-family shareholders; (3) identification with the firm, meaning reputational losses are sustained by the family if the firm lags its peers or receives negative press as a result of poor performance or failure; (4) the loss of binding social ties for the family if the firm were to fail; and (5) inability to retain control in the future if the firm had to be sold, merged, restructured, or liquidated.

The various dimensions of family socioemotional risk bearing described above lead family principals to place a higher subjective value on the firm than non-family principals (Zellweger et al., 2012). As a result of this expanded sense of family firm wealth-at-risk of loss (risk bearing), capturing both economic and socioemotional aspects, family owners may be more accepting of economically “satisficing” in strategic risk choices.

In sum, family principals have both the capacity and motivation to closely monitor the CEO’s risk response to incentive alignment mechanisms, such as the granting of stock options, in an attempt to ensure that their firm does not engage in excessive risk seeking or excessive risk aversion. Thus, we expect dominant family principals to be more vigilant and resistant with
regard to excessive CEO risk aversion and excessive CEO risk seeking than their non-family counterparts. In turn, we expect that this will lead to an attenuation of the CEO’s risk aversion in response to current option wealth and risk seeking in response to prospective wealth.

Hypothesis 1. CEOs are less likely to exhibit excessive risk aversion (lower risk taking than predicted by BAM) in response to current option wealth under family than non-family control.

Hypothesis 2. CEOs are less likely to exhibit excessive risk seeking (higher risk taking than predicted by BAM) in response to prospective option wealth under family than non-family control.

The Moderating Role of Family CEO

We now examine the CEO characteristic that we believe is most likely to influence the extent to which the dominant family owner intervenes to restrain the CEO’s risk taking response to the incentive system: the presence of family relationships between CEO and family principals.

Within family firms, we expect family CEOs to automatically fall into line with the risk preferences of the broader family group, given that they themselves form part of the dominant coalition (with concentrated firm-specific risk bearing) that we have argued leads to active avoidance of excessive risk behavior. In return for their loyalty to the family principals, these CEOs enjoy job security and the SEW benefits of identification, emotional satisfaction, and binding social ties to the power elite (Berrone et al., 2012; Gomez-Mejia et al., 2001, 2003; Kets de Vries, 1993). Said differently, when the family CEO is at the helm of the business, equity based pay is more likely to be awarded with the objective of increasing equity ownership of the family relative to minority shareholders, which preserves the control aspect of family SEW, rather than to incentivize value enhancing CEO’s strategic choices. This equates to a more symbolic (relative to substantive) use of equity incentives.
It follows that the family CEO’s estimation of risk bearing associated with the firm is likely to be more stable than the equivalent for non-family CEOs, given that equity wealth that dominates non-family CEO risk bearing is influenced by volatile share prices, whereas the family CEO’s socioemotional attachment to the firm – that is included in their estimation of firm risk bearing – is less likely to waiver. This additional risk bearing of family CEOs and the lower volatility of that risk bearing is underlined by their greater employment security, reflected by longer tenures (Cruz et al., 2010; Gomez-Mejia et al., 2001). Ultimately, the family CEO plays the roles of both steward of the company in a work capacity and family representative within the firm (Beehr et al., 1997). As a result, the family CEO will be motivated to act altruistically toward their family (Schulze et al., 2002), making them more sensitive to the performance consequences of excessive risk aversion or excessive risk seeking for the family firm. Hence, family CEOs are less likely to respond to their stock option incentives according to the opportunistic behavioral logic of current option wealth (reducing firm risk) and prospective option wealth (increasing firm risk). Because of their symmetrical risk preferences with dominant family owners, we expect self-regulation by family CEOs, meaning that the risk response to equity incentives is self-constrained within family firms. As a result, we predict an attenuation of the effect of CEO option incentives when a family CEO is at the helm of the family business.

Hypothesis 3. Family CEOs are less likely than non-family CEOs to show excessive levels of risk aversion (lower risk taking than predicted by BAM) in response to current option wealth.

Hypothesis 4. Family CEOs are less likely than non-family CEOs to show excessive levels of risk seeking (higher risk taking than predicted by BAM) in response to prospective option wealth.

METHODS
Data

To test our hypotheses, we extract data from five separate independent sources for the period 2004 through 2011: Execucomp, Compustat, Corporate Library, Option Metrics, and annual proxy statements published by the U.S. Securities and Exchange Commission (SEC). We include in the analysis only the publicly traded companies from the manufacturing sector (SIC code from Compustat with values between 2000 and 4000) to ensure the relevance of the measures of strategic risk-taking, as described below (Devers et al., 2008; Martin et al, 2013; Miller & Bromiley, 1990). We identified all family firms in the resulting sample through the ownership information offered by the Corporate Library database and we created a dummy variable that was coded as one for family controlled firms and zero otherwise. We then gathered information on each family firm regarding those cases when the CEO is also family member, the percentage of family ownership and the firm’s family generation. We collected these data from the annual proxy statements published by the U.S. Securities and Exchange Commission (SEC) through the EDGAR database. In total, we test our hypotheses on a sample of 523 companies and 1,636 firm years, over a period of 8 years.

Measures

Dependent variable. Our theoretical construct of interest is strategic risk taking, which reflects the risk behavior undertaken by the CEO on behalf of the firm. In order to calculate this measure of CEO strategic risk taking, consistent with prior behavioral agency research examining agent and firm risk taking, we calculate a single factor using three variables that have been positively associated with firm risk: R&D expenditures, long-term debt, and capital expenditures (CAPX), registered by the firms at the end of the reporting year (Devers et al., 2008; Martin et al, 2013). Factor analysis shows that the single factor explains 70.1% of the total
variance, while the values for the factor loading are 0.86 for long-term debt, 0.81 for R&D expenditures, and 0.84 for capital expenditures. Consistent with the results of the factor analysis and prior research, we use this single factor as a variable that captures the extent to which the CEO engages in riskier strategic choices (Martin et al., 2013).

The use of risk taking by CEOs to explore opportunistic behavior – and constraints that limit this – is consistent with behavioral agency research that has explored the extent to which CEOs either: (1) opportunistically pursue their private interests; or (2) are constrained (or controlled) by governance mechanisms such as incentive alignment or monitoring, hence minimizing agency costs (Eisenhardt, 1989). If a CEO pursues a risk averse course of strategic action due to high levels of risk bearing, one can assume they are unconstrained in pursuing the opportunistic tendencies assumed by agency theory (Hoskisson, Chirico, Zyung & Gambeta, 2017). Exploring risk taking in response to equity incentives allows us to examine how constraints deriving from incentive alignment and monitoring can work together.

**Independent variables.** Following the Corporate Library’s definition, family control is measured as a dummy variable (Allen and Panian, 1982; Berrone et al., 2010; Gomez-Mejia et al., 2003; Schulze et al., 2001) taking the value 1 if the firm is family-controlled (83 firms, for 183 firm years) and 0 otherwise (440 firms, for 1,453 firm years). A family-controlled firm is defined by the Corporate Library as “a company where family ties, most often going back a generation or two to the founder, play a key role in both ownership and board membership. Family members may not have full control of the shareholder vote (greater than 50%) but will generally hold at least 20%.” The fact that half the CEOs in firms coded as 1 are from the controlling family (as identified through proxy statements, an independent data source) lends credence to the Corporate Library’s categorization (more on this later). A dichotomous measure
of family control has been used in numerous family business studies (e.g., Allen & Panian, 1982; Berrone et al., 2010; Gomez-Mejia et al., 2003; Schulze, Lubatkin, Dino, & Buchholtz, 2001). Also, the 20% cutoff used by the Corporate Library should be interpreted in light of a long stream of research on control of large publicly traded firms as well as SEC reporting requirements that use an ownership threshold as low as 5% to proxy a principal’s capacity to exert major influence over the firm’s affairs (e.g., Feldman, Amit, & Villalonga, 2016; Gomez-Mejia, Tosi, & Hinkin, 1987; Hambrick & Finkelstein, 1995; McEachern, 1975; Salancik & Pfeffer, 1980). Lastly, a recent study of the entire population of Swedish firms by Gomez-Mejia and colleagues (2016) reveals that both a family dummy and a continuous family ownership measure correlate in the mid 0.90s with other indicators of family influence such as the composition of the top management team, number of relatives working for the firm, and intergenerational transitions.

*Current wealth* measures the potential for option wealth loss in the CEO’s mixed gamble (that is, one with prospective gains and losses), while *prospective wealth* is an estimate of the potential for option wealth gains in the CEO’s mixed gamble. Data for both of these measures are obtained from Execucomp. Current wealth is calculated using the number of options from each option grant, multiplied by their corresponding spread (market price minus exercise price) on the final day of the fiscal year for unexercisable and exercisable options (Martin et al, 2013). Options are exercisable if the CEO has taken ownership of them (typically after four years of receiving them), yet both exercisable and unexercisable options are believed to be endowed by CEOs, meaning it will add to their risk bearing (Wiseman & Gomez-Mejia, 1998).

*Prospective wealth* estimates the potential future increase in CEO option wealth due to successful risk-taking leading to increases in the price and value of CEO stock options, over and
above the current cash value of the stock options (current wealth). Consistent with Martin and colleagues (2013), the formula used for computing prospective wealth is:

Prospective wealth = Number of Options Held x [(1.053^{time} \times \text{Stock Price}) − \text{Stock Price}] \quad (1)

The number of options held by the CEO (in the prospective wealth calculation) represents the sum of the number of exercisable and unexercisable options; time represents a weighted average of the time to expiry of the exercisable, unexercisable, and new grants options and is computed after the steps proposed by Core & Guay (2002); and stock price represents the price of company’s stock options at the end of the fiscal year. We estimate potential future increases in the value of stock options due to successful risk-taking using the average annual increase in the Dow Jones index over the period of data analysis, which is 5.3% (Martin et al., 2013).

We measure family CEO as a dummy variable taking the value 1 if the CEO is member of the family owning the firm (founder or next-generation family member) and 0 otherwise. Family CEOs are those who are related to family owners; these are manually identified through yearly proxy statements published by the SEC. Again, using this independent source, we find that 48% of all firms classified by the Corporate Library as “family controlled” also had a family CEO, corroborating the validity of the Corporate Library’s classification. Out of this total number of family CEOs, 81% are also founders or co-founders and only 19% are family descendant CEOs.

Control variables. Consistent with prior studies of firm risk-taking, we include several control variables: firm size as the natural logarithm of firm’s total sales in the reporting year, CEO age, CEO duality as a dummy recorded as 1 in situations where the CEO is also the board chairman and 0 otherwise, CEO hedging as a dummy recorded as 1 where the firm trades put options and 0 otherwise, CEO vulnerability which is a dummy variable recorded as one if the firm has reported three consecutive years of decreases in both share price and return on assets,
and zero otherwise (Martin et al. 2013), CEO tenure as the duration of CEO employment with the firm at the end of the reporting year, and the firm’s generational stage in a one to six range (namely first [1], second [2], third [3], fourth [4], fifth [5], sixth or beyond [6]) given that the family’s influence may wane in the second or third generations (e.g., Schulze et al., 2001; Gomez-Mejia et al., 2007). In the main regression models we also control for the value of shares owned by the CEO, firm performance (using ROA), bankruptcy threat within two years (based on the Altman’s Z value; Altman, 1983), as well as the value of shares owned by the main institutional investors (the value of shares owned by the top 10% institutional owners). Please note that while value of CEO shares contributes to risk bearing, we focus on option related risk bearing given that stock option valuations are more volatile than share valuations, resulting in the options creating more powerful incentives more likely to lead to divergence with shareholder risk preferences (Sanders, 2001; Sanders & Hambrick, 2007); as a result, the behavioral agency literature we are advancing has focused on stock option incentives and controls for share ownership (cf. Martin et al., 2013; Martin et al., 2016). Finally, we control for individual year effects by using dummy variables for each year.

Analysis

We Winsorize our data at the 1% level to control for extreme outliers. Furthermore, we standardize our variables with a mean of 0 and standard deviation of 1. Because we are using panel data in our model we use the Hausman test to assess whether fixed effects and random effects influenced the data (Certo & Semadeni, 2006). Our significant results ($p$-value < 0.001, $X^2 = 106$) indicate the need to use a fixed effects model. We run the regressions using the `xtreg` function from STATA, with the `fe` (fixed effects) option.
RESULTS

Table 1 shows the *descriptive statistics* (mean and standard deviation before being standardized) and the *correlation matrix*. Tables 2–3 contain the results of the regression models with strategic risk-taking as the dependent variable. Our graphs of the interaction effects use percentiles to reflect the low (25\(^{th}\) percentile) and high (75\(^{th}\) percentile) values of the moderator variables. As shown in Table 2, prospective wealth and current wealth are significant and in the directions previously theorized by BAM (leading to greater CEO risk-seeking and CEO risk aversion respectively) in the main effects model. In the interactions model (Model 3, Table 2), current wealth’s interaction with family ownership is significant and positive (0.04) at \(p < 0.05\); that is, the negative effect of CEO risk bearing upon CEO risk aversion is attenuated when there is a dominant family owner (for a graphic representation, see Figure 1A). This provides support for Hypothesis 1’s prediction that family principals are more likely than non-family principals to limit CEO risk aversion in response to their current wealth. Supporting Hypothesis 2, family ownership also attenuates the relationship between CEO prospective wealth and risk taking. This is evident in the interaction coefficient of \(-0.06\) (\(p < 0.01\)) significantly attenuating the main effect coefficient of 0.05 (Table 2, Models 2 and 3); for a graphic representation, see Figure 1B).

Looking at Figures 1A and 1B, the slope depicting the dotted line for the family firm CEO risk response to incentives is almost flat (that is, close to a gradient of zero). Thus we can conclude that while the design of the compensation package of family and non-family firms is very similar, the observed effect of CEO incentives on risk taking is practically nil for family firms. We interpret this to mean that the monitoring advantage combined with the additional socioemotional risk bearing of family principals appear to negate the effect of CEO option incentives on risk taking in family firms.
Model 3 in Table 3 tests Hypotheses 3 and 4. Please note that the sample used for this empirical test differs from that used for prior testing, given that we now use only the sub-sample of family firms to see if the family CEO (a dummy variable) effect is stronger than for non-family CEOs, and thus whether the family CEO self-regulates, as suggested by our theory. Hypothesis 3 is not supported, as risk-averse response to current wealth does not differ by family CEO status. Hypothesis 4 predicts that family control will have a greater attenuating effect on the relationship between CEO prospective wealth and excessive strategic risk-taking when the CEO is a family member; this is strongly supported, as reflected by the negative (b = −0.12, p < 0.001) coefficient for the two-way interaction of the family CEO dummy with prospective wealth in Table 3, Model 3, which significantly constrains the main effect of CEO prospective wealth. It follows that in firms with a dominant family owner, family CEOs will be less inclined to make egocentric, higher-risk strategic decisions aimed at increasing their prospective option wealth.

Similar to our observation above regarding Figures 1A and 1B, Figure 1C shows that the dotted line depicting the response of family CEOs to prospective wealth is very muted, almost to the point of being non-existent. Said differently, the gradient of the slope depicting the relationship between CEO prospective wealth and strategic risk taking is close to zero for family CEOs. Hence, within family firms, option incentives are largely irrelevant when it comes to the risk taking behaviors of family CEOs.
**Robustness Tests**

We conduct additional analyses to check the robustness of our results across different model specifications. We use a two-stage least squares (2SLS) regression model to control for the endogeneity of our independent variables (current wealth, and prospective wealth) in our models predicting excessive risk taking to test for evidence that the correlation between the presumably endogenous variables and the error term is strong enough to result in significantly biased estimates. That is, we use instrumental variables to control for the possibility that the risk profile of the firm may also shape the design of the compensation package. In line with previous studies that use lags of endogenous independent variables as instruments (e.g., Gerber, 1998; Yogo, 2004), we use the lag of both current wealth and prospective wealth as instrumental variables for each of current and prospective wealth in our two stage least squares analysis (Semadani, Withers, & Certo, 2014) to ensure that the instruments only influence our dependant variable (CEO risk taking) through the potentially endogenous independent variables.

We test the validity of the instruments with the value of the F-statistic and the significance of the instrumental variables predicting the endogenous variables (current wealth and prospective wealth), followed by the evaluation of the Sargan-Hansen test of overidentification to account for their exogeneity (Martin, Gözübüyük, & Becerra, 2015). The F-statistic in the first-stage analysis of 2SLS and the Sargan-Hansen test are both within the bounds of acceptability for most of our models. The exception was that the interaction coefficients corresponding to historical aspiration were significant for both the above and below median splits. We also conduct a robustness test using a dependent variable calculated as the addition of standardized R&D expenditures, capital expenditures, and long-term debt. The results of the
corresponding regression models using the alternate dependent variable are substantially the same as those presented below.

Given the potential change in intensity of socioemotional motivations over the life of the family firm, we included the firm's generational stage in a one to six range (with one being founder firm and six being a firm owned by the 6th generation of the founding family) as a control variable. That is, our results are robust when we control for the possibility that the family’s influence may wane in the second, third or later generations (e.g., Schulze et al., 2001; Gomez-Mejia et al., 2007), which our results were robust to.

Lastly, we have used alternative family dummy variables as a robustness test. That is, we have used different ownership cut-offs for the categorization of family firm ownership with more than 25% family ownership and another with more than 30% family ownership. We have used these two family firm categorizations instead of our initial approach with more than 20% family ownership (the Corporate Library Definition) and the results are substantially unchanged.

**DISCUSSION AND CONCLUSIONS**

Our study aims to examine the effect of ownership structure—specifically, the constraining effect of family ownership—on managerial agents’ (or CEOs’) risk taking behaviors in response to an option-based incentive alignment plan. To do so, we combine behavioral agency research examining agent risk behavior and family firm research examining family principals’ risk preferences relative to non-family principals. Our findings demonstrate that family ownership mitigates: (1) the negative risk bearing (current wealth) effect on CEO strategic risk taking, and (2) the positive prospective wealth effect upon CEO strategic risk taking. These findings make important theoretical and practical contributions to both literatures, which we expand upon below.
The field of behavioral agency in the management literature has sought to enhance the predictive validity of models analyzing agent risk taking. For example, BAM has drawn upon behavioral decision research, such as the concept of loss aversion from prospect theory, to allow us to understand how equity-based pay influences agent risk taking (c.f., Denya et al., 2005). Recent refinements in this field also demonstrate that prospective wealth may incentivize agents to take greater risk, acting as a separate heuristic that coexists with the concepts of loss aversion and risk bearing (Martin et al., 2013). What this theory currently lacks is an appreciation of the role of principal risk bearing in this process. The failure of behavioral agency to consider the influence of firm principals’ economic and non-economic motives on CEO risk taking behaviors is curious given the well documented influence of a firm’s principals upon the firm’s strategic decisions, particularly in the context of family firm decision-making (for a review of the various manifestations of family principal influence, see Gomez-Mejia et al., 2011). In particular, we demonstrate that, in addition to considering the influence of compensation design, evaluation criteria, and the other variables included in the original formulation of BAM, one should also consider the dominant principals’ wealth-at-risk of loss (financial and socioemotional in the case of the family) in order to predict agent (or CEO) risk-taking. This is evidenced by the fact that for non-family firms, the risk behaviors of the CEO fall in line with BAM’s predictions. Yet for family firms this is not the case, particularly when the family owner is more vulnerable to diminished socioemotional and financial endowments. More broadly, BAM’s use in the corporate governance literature has focused primarily on the effect of incentive alignment systems on agent risk taking without much consideration of the monitoring aspect of principal-agent relations. Our findings indicate that when principals have a strong monitoring capacity (as in the case of dominant family owners), their risk preferences may counteract any discordant
motivational effect of the incentive alignment system on agent risk taking. In fact we detect a minimally observable CEO incentive effect on risk taking when the family is a dominant principal and within a subgroup of family owned firms the incentive effect is almost nil when the CEO is a family member.

In terms of family firm risk preferences relative to non-family firms, we show that family firms are not necessarily consistently more risk averse than non-family firms when it comes to their preferences for agents’ strategic choices (a generally accepted premise in much of the family business literature; c.f., Anderson & Reeb, 2003; Fan & Wong, 2002). On the contrary, our theory suggests family firms that have constrained CEO risk aversion (due to the family principals being uncomfortable with the threat posed by excessive risk aversion) will have higher levels of risk than non-family firms that have CEOs with similar levels of current wealth. At the same time, family firms whose CEOs have high prospective option wealth, will be more risk averse than non-family firms whose CEOs have the same levels of prospective wealth. While this conclusion is based on logical inferences well grounded in prior family business literature, given that we can’t measure CEO constraints directly, our theory and results advance our understanding of family firm risk preferences relative to non-family firms by considering the family principals’ constraints upon excessive agent risk taking and risk aversion in response to their stock options.

Our study also contributes to the literature that provides an institutional explanation for the adoption of certain corporate governance practices, such as long-term income plans, that are consistent with a prevailing “agency logic” (Zajac & Westphal, 1994; Westphal & Zajac, 1995). Family firms are not immune to institutional pressures if they wish to attract and retain competent CEOs who may have alternative employment opportunities. In fact, we found no
difference in the distribution of this type of incentive plan in our population of firms by family ownership status. Our theory indicates that family principals are likely to adopt equity based incentive systems for their CEOs in response to institutional and labor market pressures (Tuschke & Sanders, 2003); this in turn requires intensive monitoring in order to ensure that the subsequent risk behavior is not inconsistent with the dominant family owners’ risk preferences (Tosi & Gomez-Mejia, 1989). We suggest that family firms may adopt equity-based incentive plans for CEOs both substantively (when there is alignment of risk preferences) and symbolically (when there is misalignment of risk preferences). This refines previous research which documented the symbolic adoption of equity incentives—that is, the failure to actually use incentives despite the firm’s apparent embrace of them—and attributed it to the opportunistic use of CEO power (c.f., Zajac & Westphal, 1994). Our results show that the firm’s principals influence the extent to which incentives are substantively or symbolically embraced. That is, when agent and principal risk preferences are aligned, firm principals tend not to constrain the behavioral effects on the CEO after the incentives are adopted, reflecting substantive use of equity-based pay. Conversely, when risk preferences are misaligned, the adoption of equity-based pay appears more symbolic, as reflected by deviation from BAM’s predictions due to principals’ constraining behavior (greater limitations are placed on CEO risk-taking when the family principal is more vulnerable to losses). In other words, family owners of publicly traded firms appear to enjoy the legitimacy that comes from adopting a ubiquitous governance mechanism, but when their risk bearing is higher, adoption of this governance mechanism appears to be—at least relative to non-family firms—neutralized in practice. At the CEO level, our findings show that family CEOs are stewards of the family principals and therefore are more likely to self-regulate, or make strategic decisions that shield the family from socioemotional and
financial losses, and less likely to make egocentric strategic decisions aimed at increasing their prospective option wealth.

To our knowledge this is the first study that bridges BAM’s research on CEO risk taking with BAM’s research on agent risk taking driven by ownership configuration. Concerning the special case of family firms, Chrisman and Patel (2012: 977) note that “prior studies indicate that family firms will embrace risky decisions that preserve socioemotional wealth even if they are expected to decrease long term financial wealth, yet also avoid risky decisions that might increase long term financial wealth but reduce socioemotional wealth.” This discourse has not considered the role of CEO incentives, which takes center stage in most of the corporate governance literature dealing with firm risk-taking, including those based on BAM (e.g., Devers et al., 2008; Larraza-Kintana et al., 2007; Sanders, 2001; Martin et al., 2013). We address this issue directly in the context of family firms. By offering the CEO options, while at the same time monitoring the CEO to ensure that the family firm doesn’t adopt excessive risk seeking or risk aversion (that is, constraining risk behavior predicted by BAM that could be considered excessive), the family principal reconciles the need to preserve SEW with long-term financial welfare. This approach to designing a “pay mix” for CEOs also helps the family firm comply with prevailing corporate governance practices, with its attendant benefits (for instance, making competitive offers to potential CEO candidates, gaining positive market reactions, and winning the approval of current and potential investors).

This study also makes important contributions to our understanding of agency costs as a function of ownership structure. Agency and family firm research examining agency problems unique to family firms has provided conflicting arguments regarding the implications of family ownership for agency costs. Some scholars have argued that concentrated ownership leads to
more intense monitoring, reducing the agency costs associated with opportunistic agent behavior (Jensen & Meckling, 1976). However, others have made a strong case that family ownership is associated with unique types of agency costs, such as family altruism and entrenchment of family employees tainting hiring and firing decisions (Schulze et al., 2001) and other forms of expropriation from minority shareholders (Fan & Wong, 2002). Our findings contribute to this discourse by demonstrating that: (1) family ownership may reduce non-family shareholder agency costs by constraining CEO risk responses (risk aversion) to current option wealth and (2) family ownership may increase non-family shareholder agency costs by constraining CEO risk responses (risk seeking) to prospective option wealth, thus neutralizing the effect of the principal-agent incentive alignment mechanisms. That is, based on classical agency theory’s assumption that shareholders prefer their CEOs to take more risk, per our theory the family principals’ restriction of excessive CEOs risk aversion (to protect their accumulated option wealth) should alleviate agency costs, while the family principals’ restriction of excessive CEO risk seeking (in pursuit of further wealth) should increase agency costs in line with the predictions of the agency theory. It can also be that intensive family monitoring is used to ensure that CEOs invest according to the market rules (James, 1999) by minimizing the probability of both underinvestments (failing to invest in projects with positive net present values) and overinvestments (investing in projects with negative net present value). These are perspectives from which to consider the implications of family ownership for the unique nature of principal-principal agency (Type II) problems and associated costs within family firms relative to non-family firms.

The fact that family firms are not consistently more risk averse or risk seeking than non-family firms (contingent upon family vulnerability to loss) might also help explain some of the
reasons why the evidence is so unclear as to the effect of family ownership on firm performance. Several comprehensive literature reviews (e.g., Gedajlovic, Carney, Chrisman, & Kellermanns, 2012; Sacristan-Navarro, Gomez-Anson, & Cabeza-Garcia, 2011), meta-analyses (Carney, Gedajlovic, & van Essen, 2011; van Essen, Carney, Gedajlovic, & Heugens, 2011), and a series of papers by Villalonga and colleagues (Amit & Villalonga, 2014; Villalonga & Amit, 2006, 2009, 2010) conclude that as a whole family control has some positive impact on performance, although various factors may offset (e.g., dual class stock) or augment (e.g., founder presence) the positive performance effect of family control. Consistent with the position of Gomez-Mejia and colleagues (2011: 704), our results suggest that in family businesses, the positives of close monitoring (preventing lower risk-taking by CEOs to protect their accumulated option wealth) coexist in a tenuous balance with the negatives (e.g., the inability of CEOs to take higher risks that might concurrently increase their equity wealth and the value of the overall portfolio of diversified shareholders; Hill & Snell, 1988; Nyberg et al., 2010).

The constraining effect upon non-family CEO risk behavior at family firms also underlines that family risk preferences are likely to be more stable than their CEOs, due to the socioemotional component of family risk bearing being less volatile than CEO incentives shaped by the share prices and equity grants. The unstable nature of CEO risk preferences is underlined by the significant role of time to expiry in the measure of prospective wealth. Hence, while the CEO and family owners share financial risk bearing, the family’s unique socioemotional endowment is likely to be stable over time, driven by their emotional attachment to their firm and often by a desire to pass their firm on to later generations. These dimensions of socioemotional wealth are therefore likely to lead the family to constrain CEO behaviors in response to the more volatile incentives associated with their option wealth.
Limitations and Future Directions

As with most studies, ours is subject to some limitations. Our sample is limited to publicly listed firms due to the databases we have access to. We restrict our measures of equity wealth to stock options. This is because: (1) stock options continue to be ubiquitous in CEO pay at publicly listed firms, and now exceed more than two-thirds of the typical CEO’s compensation package (Nyberg et al., 2010; Martin et al., 2013); (2) the majority of BAM literature has focused on the role of stock options (and the associated heuristics) in influencing CEO behavior and agency costs (Devers et al., 2008; Martin et al., 2013); and (3) stock options are likely to have a stronger effect on CEO behaviors than other forms of CEO wealth due to the more extreme sensitivity of stock options to share price movements (Sanders, 2001). Future studies could look at how family ownership affects the behavioral influence of other forms of CEO firm-specific wealth.

A limitation of this research is that, by relying on secondary archival sources, the proposed theoretical mechanism explicating the differential response of CEOs to their incentive system as a function of family control (ie., CEO constraints or self-regulation) is not measured directly. Future research can try to develop psychometric indicators of these explanatory constructs (for instance, CEO perceptions of constraints) or perhaps rely on more qualitative participant observation methods (for instance, watching board deliberations) to determine if in fact our proposed mechanism is confirmed. We do feel confident however, based on the literature, that the explanation we advance here is reasonable and logically compelling.

There is likely to be significant heterogeneity across family firms with regard to their socioemotional investments in the firm. There are also various dimensions to SEW (cf. Berrone et al., 2012) that each have distinct effects upon family decision-making. A common problem for
family firm scholars has been measuring and teasing apart these separate influences and attempting to measure the heterogeneity in SEW; this is also a limitation of our study. Future research could attempt to delve further into the sources of SEW and how they separately influence family firm decisions to constrain CEO behaviors. Finally, time to expiry is significantly and positively related to our prospective wealth measure; hence we would like to highlight the role of option time to expiry in creating incentive for CEO risk seeking. This further emphasizes the volatile nature of CEO incentives, given prospective wealth of CEO stock options tapers off considerably as time to expiry nears. Future research could unpack the role of the various components of prospective wealth in shaping CEO incentives.
REFERENCES


Semadeni, M., Withers, M. C., & Trevis Certo, S. 2014. The perils of endogeneity and


**FOOTNOTES**

1. This translates to a predicted negative relationship between agent risk bearing and risk-taking (Wiseman & Gomez-Mejia, 1998)
### Table 1

Descriptive Statistics and Correlation Matrix^a

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<th>Variables</th>
<th>M</th>
<th>SD</th>
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<th>12</th>
<th>13</th>
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<tr>
<td>1. Strategic risk-taking</td>
<td>0.03</td>
<td>0.69</td>
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<td>2. Current wealth ^a</td>
<td>12,174</td>
<td>23,705</td>
<td>.15</td>
<td></td>
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<td>3. Prospective wealth ^a</td>
<td>72,383</td>
<td>138,382</td>
<td>.31</td>
<td>.36</td>
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<td>4. Family control</td>
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<td>.05</td>
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<td>5. Bankruptcy threat</td>
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<td>6. CEO tenure</td>
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<td>7. Family CEO</td>
<td>0.06</td>
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<td>8. Firm size</td>
<td>7.33</td>
<td>1.59</td>
<td>.60</td>
<td>.27</td>
<td>.30</td>
<td>-.16</td>
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<td>9. CEO age</td>
<td>55.46</td>
<td>6.42</td>
<td>.07</td>
<td>.07</td>
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<td>.03</td>
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<td></td>
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</tr>
<tr>
<td>10. Institutional investors</td>
<td>85.80</td>
<td>139.00</td>
<td>.84</td>
<td>.20</td>
<td>.31</td>
<td>-.10</td>
<td>-.21</td>
<td>-.11</td>
<td>-.08</td>
<td>.59</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>11. CEO duality</td>
<td>0.50</td>
<td>0.50</td>
<td>.15</td>
<td>.09</td>
<td>.10</td>
<td>-.17</td>
<td>-.12</td>
<td>.13</td>
<td>-.09</td>
<td>.28</td>
<td>-.23</td>
<td>.10</td>
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<td>12. Family generation</td>
<td>0.20</td>
<td>0.68</td>
<td>-.07</td>
<td>.03</td>
<td>.02</td>
<td>.81</td>
<td>.00</td>
<td>.12</td>
<td>.45</td>
<td>-.05</td>
<td>-.01</td>
<td>-.08</td>
<td>-.13</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>13. CEO hedging</td>
<td>0.93</td>
<td>0.25</td>
<td>.10</td>
<td>.08</td>
<td>.03</td>
<td>-.03</td>
<td>-.34</td>
<td>-.08</td>
<td>-.04</td>
<td>.23</td>
<td>-.11</td>
<td>.14</td>
<td>.03</td>
<td>-.02</td>
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</tr>
<tr>
<td>14. CEO vulnerability</td>
<td>0.09</td>
<td>0.29</td>
<td>-.02</td>
<td>-.04</td>
<td>-.02</td>
<td>.13</td>
<td>.03</td>
<td>-.02</td>
<td>-.01</td>
<td>.01</td>
<td>-.02</td>
<td>-.00</td>
<td>-.02</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Performance</td>
<td>0.04</td>
<td>0.11</td>
<td>.01</td>
<td>.20</td>
<td>.11</td>
<td>-.05</td>
<td>-.45</td>
<td>.03</td>
<td>-.04</td>
<td>.33</td>
<td>.02</td>
<td>.12</td>
<td>.08</td>
<td>-.01</td>
<td>.14</td>
<td>-.25</td>
<td></td>
</tr>
<tr>
<td>16. CEO shares</td>
<td>29,575</td>
<td>52,747</td>
<td>.24</td>
<td>.44</td>
<td>.41</td>
<td>.16</td>
<td>-.18</td>
<td>.30</td>
<td>.20</td>
<td>.28</td>
<td>.11</td>
<td>.25</td>
<td>.11</td>
<td>.10</td>
<td>.10</td>
<td>-.03</td>
<td>.16</td>
</tr>
</tbody>
</table>

^aN = 1,636. Correlations with an absolute value greater than 0.03 are significant at p < .05. Variables 2, 3, and 16 are expressed in thousands. Variables 8 and 10 are expressed in millions. Performance was measured as ROA.
Table 2
Regression Models Predicting Strategic Risk-Taking:
Family Control Moderatora

<table>
<thead>
<tr>
<th>Control Variables</th>
<th>Family Control</th>
<th>Main Effects</th>
<th>Family Control Interaction</th>
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<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Beta</td>
<td>S.E.</td>
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<tr>
<td>CEO age (_{t-1})</td>
<td>0.03</td>
<td>(0.01)</td>
<td>0.03*</td>
</tr>
<tr>
<td>Institutional investors (_{t-1})</td>
<td>0.17***</td>
<td>(0.04)</td>
<td>0.17***</td>
</tr>
<tr>
<td>CEO duality (_{t-1})</td>
<td>-0.04</td>
<td>(0.02)</td>
<td>-0.04</td>
</tr>
<tr>
<td>Family generation (_{t-1})</td>
<td>0.01</td>
<td>(0.02)</td>
<td>0.00</td>
</tr>
<tr>
<td>Firm size (_{t-1})</td>
<td>0.15**</td>
<td>(0.05)</td>
<td>0.13**</td>
</tr>
<tr>
<td>CEO vulnerability (_{t-1})</td>
<td>-0.03</td>
<td>(0.02)</td>
<td>-0.03</td>
</tr>
<tr>
<td>CEO hedging (_{t-1})</td>
<td>-0.05</td>
<td>(0.04)</td>
<td>-0.03</td>
</tr>
<tr>
<td>CEO shares (_{t-1})</td>
<td>0.05***</td>
<td>(0.01)</td>
<td>0.03***</td>
</tr>
<tr>
<td>Performance (_{t-1})</td>
<td>0.00</td>
<td>(0.01)</td>
<td>0.00</td>
</tr>
<tr>
<td>CEO tenure (_{t-1})</td>
<td>-0.02</td>
<td>(0.02)</td>
<td>-0.01</td>
</tr>
<tr>
<td>Bankruptcy threat (_{t-1})</td>
<td>0.00</td>
<td>(0.02)</td>
<td>0.00</td>
</tr>
<tr>
<td>Family control</td>
<td>-0.07</td>
<td>(0.08)</td>
<td>-0.06</td>
</tr>
<tr>
<td>Family CEO</td>
<td>-0.04</td>
<td>(0.06)</td>
<td>-0.05</td>
</tr>
<tr>
<td>Current wealth (_{t-1})</td>
<td>-0.04***</td>
<td>(0.01)</td>
<td>-0.04***</td>
</tr>
<tr>
<td>Prospective wealth (_{t-1})</td>
<td>0.05***</td>
<td>(0.01)</td>
<td>0.06***</td>
</tr>
<tr>
<td>Family control X Current wealth (_{t-1})</td>
<td>0.04*</td>
<td>(0.02)</td>
<td>0.04*</td>
</tr>
<tr>
<td>Family control X Prospective wealth (_{t-1})</td>
<td>-0.06**</td>
<td>(0.02)</td>
<td>-0.06**</td>
</tr>
<tr>
<td>Constant</td>
<td>0.04</td>
<td>(0.04)</td>
<td>0.02</td>
</tr>
<tr>
<td>R squared (within)</td>
<td>0.14</td>
<td>(0.04)</td>
<td>0.16</td>
</tr>
<tr>
<td>R squared (between)</td>
<td>0.64</td>
<td>0.64</td>
<td>0.66</td>
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<tr>
<td>R squared (overall)</td>
<td>0.14</td>
<td>0.16</td>
<td>0.17</td>
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<tr>
<td>N</td>
<td>1636</td>
<td>1636</td>
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</tr>
</tbody>
</table>

*aPlease note that the change in R squared for main effects and interactions models is significant at p < .05. Year dummies are included in the regressions but not listed in this table.

*p < .05
**p < .01
***p < .001
Table 3
Regression Models Predicting Strategic Risk-Taking: Family CEO Moderator α

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Control Variables</th>
<th>Main Effects</th>
<th>Family CEO Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td><strong>FAMILY CEO</strong></td>
<td><strong>FAMILY CEO</strong></td>
<td><strong>FAMILY CEO</strong></td>
<td><strong>FAMILY CEO</strong></td>
</tr>
<tr>
<td>CEO age, t</td>
<td>-0.07*** (0.02)</td>
<td>-0.08*** (0.02)</td>
<td>-0.06** (0.02)</td>
</tr>
<tr>
<td>Institutional investors, t</td>
<td>0.03 (0.05)</td>
<td>0.02 (0.05)</td>
<td>0.09 (0.05)</td>
</tr>
<tr>
<td>CEO duality, t</td>
<td>-0.05 (0.03)</td>
<td>-0.05 (0.03)</td>
<td>-0.02 (0.02)</td>
</tr>
<tr>
<td>Family generation, t</td>
<td>-0.02 (0.04)</td>
<td>-0.04 (0.04)</td>
<td>-0.03 (0.03)</td>
</tr>
<tr>
<td>Firm size, t</td>
<td>0.21** (0.06)</td>
<td>0.19** (0.07)</td>
<td>0.21*** (0.05)</td>
</tr>
<tr>
<td>CEO vulnerability, t</td>
<td>-0.00 (0.02)</td>
<td>-0.01 (0.02)</td>
<td>-0.00 (0.02)</td>
</tr>
<tr>
<td>CEO hedging, t</td>
<td>-0.04 (0.11)</td>
<td>-0.03 (0.11)</td>
<td>-0.17 (0.10)</td>
</tr>
<tr>
<td>CEO shares, t</td>
<td>0.04*** (0.01)</td>
<td>0.04*** (0.01)</td>
<td>0.01 (0.01)</td>
</tr>
<tr>
<td>Performance, t</td>
<td>-0.02 (0.02)</td>
<td>-0.02 (0.02)</td>
<td>-0.03* (0.01)</td>
</tr>
<tr>
<td>CEO tenure, t</td>
<td>0.02 (0.02)</td>
<td>0.02 (0.02)</td>
<td>0.02 (0.02)</td>
</tr>
<tr>
<td>Bankruptcy threat, t</td>
<td>0.00 (0.02)</td>
<td>0.00 (0.02)</td>
<td>0.00 (0.01)</td>
</tr>
<tr>
<td><strong>Family control</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family CEO</td>
<td>0.01 (0.04)</td>
<td>0.01 (0.04)</td>
<td>0.09* (0.04)</td>
</tr>
<tr>
<td>Current wealth, t</td>
<td>-0.02 (0.01)</td>
<td>-0.03 (0.03)</td>
<td></td>
</tr>
<tr>
<td>Prospective wealth, t</td>
<td>-0.00 (0.01)</td>
<td>0.10*** (0.02)</td>
<td></td>
</tr>
<tr>
<td><strong>Family control X Current wealth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family CEO X Current wealth, t</td>
<td>0.02 (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family CEO X Prospective wealth, t</td>
<td></td>
<td>-0.12*** (0.02)</td>
<td></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-0.02 (0.17)</td>
<td>-0.01 (0.16)</td>
<td>0.07 (0.14)</td>
</tr>
<tr>
<td>R squared (within)</td>
<td>0.49</td>
<td>0.51</td>
<td>0.69</td>
</tr>
<tr>
<td>R squared (between)</td>
<td>0.47</td>
<td>0.39</td>
<td>0.49</td>
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<tr>
<td>R squared (overall)</td>
<td>0.49</td>
<td>0.51</td>
<td>0.69</td>
</tr>
<tr>
<td>N</td>
<td>183</td>
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</tr>
</tbody>
</table>

**αPlease note that the change in R squared for main effects and interactions models is significant at p < .05. Year dummies are included in the regressions but not listed in this table.**

* p < .05
** p < .01
*** p < .001
Interaction Graphs

**Figure 1A**
Interaction of CEO Current Wealth and Family Firm

**Figure 1B**
Interaction of CEO Prospective Wealth and Family Firm

**Figure 1C**
Interaction of Prospective Wealth and Family CEO