



**University of
Zurich^{UZH}**

Department of Business Administration

UZH Business Working Paper Series

Working Paper No. 393

**May Bad Luck Be Without You: The Effect of CEO Luck on
Strategic Risk-taking**

Pascal Flurin Meier, Raphael Flepp, and David Oesch

June 2022

University of Zurich, Plattenstrasse 14, CH-8032 Zurich,
<http://www.business.uzh.ch/forschung/wps.html>

UZH Business Working Paper Series

Contact Details

Pascal Flurin Meier

pascal-flurin.meier@business.uzh.ch

Raphael Flepp

raphael.flepp@business.uzh.ch

David Oesch

david.oesch@business.uzh.ch

University of Zurich

Department of Business Administration

Plattenstrasse 14, CH-8032 Zurich, Switzerland

May Bad Luck Be Without You: The Effect of CEO Luck on Strategic Risk-taking

Pascal Flurin Meier, Raphael Flepp and David Oesch*

June 10, 2022

Abstract: We investigate how luck, namely, changes in a firm's performance beyond the CEO's control, affects strategic risk-taking. Fusing upper echelons theory with insights from psychology and behavioral strategy research, we hypothesize that there is a positive association between luck and strategic risk-taking and that this effect is stronger for bad luck than for good luck. We further argue that these effects vary depending on whether CEOs have experienced negative events earlier in their professional careers. Measuring luck as the exogenous component of recent firm performance, we show empirically that CEOs react to bad luck by adopting more conservative risk-taking policies while showing no reactions to good luck. This effect predictably varies with the strength of bad luck signals, and it is stronger for CEOs who have experienced negative events during their professional careers. We contribute to the literature by providing the first evidence on the role of luck in corporate strategic risk-taking.

Keywords: Strategic Risk-Taking; Chief Executive Officers; Luck; Upper Echelons; Behavioral Strategy

JEL Classification: D22, D91, G30, M10, L20

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

*Corresponding author: Pascal Flurin Meier, University of Zurich, Plattenstrasse 14, 8032 Zurich, Switzerland, pascal-flurin.meier@business.uzh.ch/Coauthors: Raphael Flepp, University of Zurich, Plattenstrasse 14, 8032 Zurich, Switzerland; David Oesch, University of Zurich, Plattenstrasse 14, 8032 Zurich, Switzerland

1 INTRODUCTION

“A man forgets his good luck next day, but remembers his bad luck until next year.”

E. W. Howe, American writer, in *Country Town Sayings* (1911, p. 118)

How does luck affect the behavior of chief executive officers (CEOs)? CEOs play a pivotal role in organizational decision-making and outcomes, and this role seems to have increased substantially over the years (Quigley & Hambrick, 2015). Under this presumption, upper echelons theory posits that CEOs’ perceptions of environmental and organizational stimuli are shaped by their values, psychological properties and experiences (Hambrick, 2007; Hambrick & Mason, 1984; Hoskisson et al., 2017) and ultimately impact their strategic choices.

One core strategic choice that management and strategy research has focused on is strategic risk-taking (e.g., Benischke et al., 2019; R. J. Campbell et al., 2019). Numerous studies show that different CEO characteristics (see Hoskisson et al., 2017; Wang et al., 2016 for overviews) and contextual characteristics affect strategic risk-taking (e.g., Souder & Bromiley, 2012). However, one important contextual stimulus that the literature has not yet investigated is CEO luck. As opposed to the component of a firm’s performance that is attributable to its CEO’s skills, CEO luck denotes changes in firm performance that are beyond the CEO’s control (Bertrand & Mullainathan, 2001; Garvey & Milbourn, 2006).¹ Thus, it remains unclear how CEOs’ strategic risk-taking choices are affected by the experience of luck and how different CEOs vary in their responses to luck.

Luck is an exogenous environmental stimulus of both CEOs and firms. Higher levels of luck (good luck) might result from favorable market and/or industry conditions, whereas lower levels of luck (bad luck) might result from market or industry recessions. The exogenous characteristic

¹ The exogenous component of a firm’s recent performance might comprise not only its CEO’s luck but also the luck of various other stakeholders. However, because individual CEOs are responsible for a considerable proportion of their firms’ performance (e.g., Quigley & Hambrick, 2015), it seems reasonable to attribute the luck component of performance to CEOs.

of luck allows us to overcome the concern underlying upper echelons theory that the selection of executives and thus their characteristics are endogenous to firms' situations (e.g., Bromiley & Rau, 2016; Neely Jr et al., 2020). Consequently, we are able to investigate the causal effect of luck on CEOs' strategic risk-taking choices.

Behavioral decision scholars have shown that prior outcomes affect subsequent risk-taking (e.g., Ampudia & Ehrmann, 2017; Kaustia & Knüpfer, 2008; Kempf et al., 2009; Koudijs & Voth, 2016; Thaler & Johnson, 1990). More generally, luck manifests itself as a positive or negative outcome that has been shown to influence expectations in different contexts (e.g., Feather, 1966; Hahn & Warren, 2009). Building upon behavioral decision theory and behavioral strategy, we argue that higher levels of luck increase the risk propensity of CEOs, while lower levels of luck decrease their risk propensity. Consequently, we expect a positive association between the level of luck and subsequent strategic risk-taking.

Furthermore, consistent with the notion that individuals are more sensitive to negative outcomes than positive outcomes (e.g., Kahneman & Tversky, 1979; Kuhnen, 2015) and the literature on social psychology suggesting an attentional allocation bias toward negative information (e.g., Baumeister et al., 2001; Pratto & John, 1991), we propose that lower levels of luck (bad luck) reduce strategic risk-taking to a greater extent than higher levels of CEO luck (good luck) increase strategic risk-taking. Building on the rich body of literature on upper echelons theory, we subsequently propose that the negative effect of lower levels of CEO luck (bad luck) on strategic risk-taking is moderated by the past adverse professional experience of CEOs. Such prior negative experiences are likely to increase the salience of current bad luck, accentuating CEOs' negative responses to it.

Our results, which are based on longitudinal analyses of archival data, support our hypotheses. Following Daniel et al. (2020) by inferring luck from the component of recent stock returns stemming from firm-unrelated overall market and industry returns, we find that luck is

positively associated with strategic risk-taking. We also show that this effect is asymmetric, as CEOs react to bad luck by engaging in more conservative risk-taking policies while exhibiting no reactions in their risk-taking investments to good luck. Finally, our results show that the past negative professional experiences of CEOs, such as the experience of a negative market shock or past situations that involved bad luck, reinforce the negative effect of bad luck, leading CEOs to shy away even more from strategic risks.

Our study makes several important contributions. Most importantly, our study is the first to examine the role of luck in CEOs' strategic risk-taking decisions. Because luck is exogenous to CEOs and firms, we are able to show that luck has a positive causal effect on strategic risk-taking. In other words, CEOs' strategic risk-taking is lower after lower levels of CEO luck (bad luck) than after higher levels of CEO luck (good luck). Apart from the literature on executive compensation for luck (e.g., Bertrand & Mullainathan, 2001; Daniel et al., 2020), turnover decisions (e.g., Jenter & Kanaan, 2015) and the CEO labor market (Amore & Schwenen, 2022), little is known about how luck influences the decision-making of CEOs themselves. By analyzing luck and strategic risk-taking, we document that luck also affects actual CEO behavior.

Second, we contribute to behavioral decision theory and behavioral strategy research by showing that good and bad luck asymmetrically affect strategic risk-taking. In particular, the higher the level of bad luck is, the less subsequent strategic risk-taking CEOs are willing to take; however, differences in the level of good luck have no effect on subsequent strategic risk-taking. Several earlier papers have documented that particularly negative events such as a recession at the beginning of a CEO's career (Schoar & Zuo, 2017) or the experience of distress (Dittmar & Duchin, 2016) lead to more conservative CEO management styles. Our findings extend this literature by showing that CEOs also asymmetrically react to increases in the occurrence of good and bad luck.

Third, we add to the upper echelons literature by focusing on how CEOs' past negative professional experiences moderate their responses to luck. Earlier related studies mainly focused on the positive aspects of professional experiences such as tenure or industry experience (e.g., Finkelstein & Hambrick, 1990; Simsek, 2007; Zhang, 2008). Our results suggest that past negative professional experiences are important moderators of CEOs' reactions when they are facing bad luck, showing that CEOs who are "branded" with such experiences exhibit an even stronger negative risk-taking reaction.

Finally, our findings have several important implications for practice. Even though CEO luck is exogenous, responses to it are manageable. Particularly after having experienced bad luck, CEOs tend to reduce their strategic risk-taking, which might be detrimental to firms' long-term competitiveness and performance (Hoskisson et al., 2017). Thus, more data-driven decision approaches or stricter board oversight might help prevent the potential adverse effects of behavioral decision-making. Furthermore, as the past negative professional experiences of CEOs strengthen this reduction in strategic risk-taking after bad luck, boards should consider this tendency when selecting a CEO.

The paper proceeds as follows. In Section 2, we derive our hypotheses based on relevant literature and theories. The data and empirical methodology are explained in Section 3. The baseline results and several robustness tests are presented in Section 4. Section 5 concludes the paper with a discussion.

2 THEORETICAL BACKGROUND AND HYPOTHESES

2.1 LUCK AND RISK-TAKING

Building on the fundamental premise of bounded rationality (Cyert & March, 1963), upper echelons theory postulates that executives' perceptions of environmental and organizational stimuli are shaped by their values, psychological properties and experiences (Hambrick, 2007; Hambrick & Mason, 1984; Hoskisson et al., 2017). Ultimately, these managerial perceptions,

combined with values, provide the basis for executives' strategic risk-taking (Hambrick, 2007; Hambrick & Mason, 1984; Hoskisson et al., 2017). Thus, even the most educated and influential decision-makers, such as CEOs, are not expected to be free of human dispositions when facing complex environmental and organizational stimuli.

One important environmental stimulus that CEOs might respond to in their strategic risk-taking behavior is luck, which refers to the exogenous component of firms' recent performance (Bertrand & Mullainathan, 2001; Garvey & Milbourn, 2006). CEO luck might arise due to market or industry movements that are independent from previous CEO actions or decisions. Favorable market and/or industry conditions are associated with higher levels of CEO luck (good luck), whereas unfavorable market or industry conditions are associated with lower levels of CEO luck (bad luck). Thus, higher levels of CEO luck are likely to be perceived as more positive environmental stimuli than lower levels of luck.

More generally, luck manifests as a positive or negative outcome, and it has been shown to affect expectations about future success in various contexts (e.g., Feather, 1966, Hahn & Warren, 2009).² For example, Thaler and Johnson (1990) find that positive prior windfall outcomes lead to more risk-taking, while negative prior windfall losses can decrease the willingness to take risks.³ Based on these findings, Sitkin and Weingart (1995) theorize that a decision maker's risk propensity is higher after positive prior outcomes than after negative prior outcomes. Indeed, the experimental results of Sitkin and Weingart (1995) show that the risk propensity of subjects who have previously experienced positive outcomes is significantly higher than the risk propensity of

² Kaustia and Knüpfer (2008) find that investors are more likely to subscribe to initial public offerings (IPOs) if their previous investments in IPOs turned out well. Similarly, Chiang et al. (2011) shows that high bidder returns increase the likelihood of participation in future auctions, but as bidders participate in more auctions, bidder returns decrease. Koudijs and Voth (2016) show that investors exposed to the risk of losing money in a lending transaction change their behavior markedly and decrease their risk-taking, while Kempf et al. (2009) finds similar evidence regarding fund managers' behavior following poor performance to prevent potential job loss. Other studies suggest that young managers exhibit trend-chasing behavior in stock investments (e.g., Greenwood & Nagel, 2009).

³ Individuals also tend to think of themselves as having a "hot hand" after a streak of positive outcomes (Gilovich et al., 1985).

subjects who have previously experienced negative outcomes and that this ultimately leads more risky decision-making on the part of the former group.

Following this argument, Chatterjee and Hambrick (2011) state that CEOs who recently performed poorly become conservative toward risk-taking, while those who recently performed well become bolder. Using a sample of CEOs from publicly listed firms between 1992 and 2006, Chatterjee and Hambrick (2011) find supporting evidence for this hypothesis. Importantly, however, Chatterjee and Hambrick (2011) focus on the component of recent firm performance that is attributable to CEOs' skill by subtracting industry performance from shareholder returns and return on assets.

Translating these insights to the context of CEO luck and subsequent strategic risk-taking, we theorize that CEOs who experience higher levels of luck have a higher risk propensity, which leads them to exhibit a lower level of risk perception and thus higher subsequent strategic risk-taking than CEOs who experience lower levels of luck. Consequently, we propose the following:

Hypothesis 1. *A positive relationship exists between CEO luck and strategic risk-taking, i.e., lower levels of luck lead to lower strategic risk-taking, and higher levels of luck lead to higher strategic risk-taking.*

2.2 GOOD VERSUS BAD LUCK

Next, we argue that the effect of CEO luck on strategic risk-taking is likely to be asymmetric. We propose that bad luck, a negative contextual stimulus, is perceived as more severe than good luck, a positive contextual stimulus.

The idea that negative outcomes loom larger than equally sized positive events has long been suggested by literature. Prospect theory (Kahneman & Tversky, 1979) predicts that responses to situations depend on the context of the corresponding decisions and the way these decisions are framed (Cannella & Holcomb). A key element of prospect theory is loss aversion, which suggests

that individuals weigh losses more heavily than gains of the same magnitude when making decisions under uncertainty (Benischke et al., 2019).

Similarly, social psychology indicates that “bad is stronger than good” (Baumeister et al., 2001, p. 362). The literature argues for an attentional allocation bias toward negative information (Fu et al., 2020), which is referred to as the negativity bias in the context of attention allocation (Smith et al., 2006). Summarizing this notion, Baumeister et al. (2001, p. 362) highlight that the allocation of a greater weight to negative stimuli “may be one of the most basic and far-reaching psychological principles”. Such stimuli produce larger, more intense, or more lasting effects than comparable positive ones (Baumeister et al., 2001). Furthermore, negative stimuli tend to inherently attract attention (Hansen & Hansen, 1988). Thus, negative stimuli have particularly strong effects on both the attention allocation process (e.g., Fiske, 1980; Smith et al., 2006) and the evaluation process (e.g., Ito et al., 1998; Kahneman & Tversky, 2013). Therefore, more managerial attention is likely to be allocated to bad luck than to good luck.

Indeed, empirical evidence suggests that negative experiences have a particularly strong effect on risk-taking behavior. For instance, Malmendier and Nagel (2011) show that “depression babies”, i.e., individuals whose lives corresponded to periods exhibiting low stock market returns, take fewer financial risks and are more pessimistic about future returns, with more recent return experiences having a stronger effect. Similarly, Ampudia and Ehrmann (2017) investigate euro-area households and find that crashes account for most of the effects on risk-taking, while the effect of booms eventually fades out.

In the context of CEOs who have experienced adverse events during their professional careers, Dittmar and Duchin (2016) find that past negative professional outcomes, such as bankruptcy or distress, lead CEOs to implement more conservative corporate policies. In contrast, experiences of positive professional outcomes, such as credit rating upgrades or highly positive cash flow changes, have no effect on corporate policies. With respect to corporate social

performance, Fu et al. (2020) find that managerial attention is more likely to be directed toward negative issues than toward positive issues. Similarly, O'Sullivan et al. (2021) find that the early-life disaster experiences of CEOs significantly affect corporate social performance and that this behavior is stronger for more severe adverse experiences.

Taking into account the negativity bias in the allocation of attention and the empirical literature on adverse events and subsequent risk-taking, we expect that CEOs are likely to direct more attention to bad luck than to good luck. Thus, we conjecture that bad luck is perceived as more severe and has a stronger effect on risk-taking. We hypothesize the following:

Hypothesis 2. *Lower levels of CEO luck (bad luck) reduce strategic risk-taking to a greater extent than higher levels of CEO luck (good luck) increase strategic risk-taking.*

2.3 MODERATING ROLE OF NEGATIVE PROFESSIONAL EXPERIENCES

In developing our baseline hypotheses, we advanced the argument that particularly low levels of luck, i.e., bad luck, reduce CEOs' risk propensity and thus negatively affect their subsequent strategic risk-taking choices. In the following, we argue that previous negative events during the career of a CEO increase the salience of current bad luck events. Salience refers to the disproportionate weighting of information to which attention is drawn (Taylor & Thompson, 1982). Cognitive psychologists have long suggested that people pay more attention to salient stimuli (e.g., Nisbett & Ross, 1980) since they may appear more vividly (Nisbett & Ross, 1980).

A substantial body of research suggests that severe one-time early-life events such as wars, recessions or other disasters have long-lasting consequences on human behavior (e.g., Bucciol & Zarri, 2015; Callen et al., 2014; Cameron & Shah, 2015; Cassar et al., 2017; He et al., 2018; Kim & Lee, 2014; Malmendier & Nagel, 2011; Sacco et al., 2003). With the exception of a few studies (e.g., Eckel et al., 2009; Voors et al., 2012), this stream of research agrees that the willingness to take risks significantly declines following the experience of adverse events.

In the context of CEOs and past negative experiences, the literature mainly focuses on one-time events occurring early in a CEO's life, i.e., well before he or she assumes office. For example, studies have shown that formative experiences in early childhood (e.g., R. J. Campbell et al., 2019; Kish-Gephart & Campbell, 2015) or other imprints (e.g., Bai et al., 2020; Bianchi, 2014; Jung & Shin, 2019; Marquis & Qiao, 2020) affect CEOs' corporate decisions.

In addition, the literature suggests that CEOs who experience negative events such as disasters or crises early in their lives hold more cash in the short term (Dessaint & Matray, 2017), positively influence their firms' corporate social performance (O'Sullivan et al., 2021), are averse to debt while leaning excessively on internal finance (Malmendier et al., 2011), have higher levels of accounting conservatism (Hu et al., 2020), and exhibit more conservative management styles (Schoar & Zuo, 2017).

Finally, Dittmar and Duchin (2016) find that CEOs with negative professional experiences (e.g., bankruptcy and distress) make more conservative corporate decisions, consistent with the notion that adverse experiences lead to higher perceptions of downside risks and make CEOs more risk averse (Hu et al., 2020). Similarly, Faulkner et al. (2020) find that CEOs who have had distressing experiences adopt more conservative accounting policies. Faulkner and García-Feijóo (2021) find that distressing experiences alter the corporate payout policies of CEOs, suggesting that they are less likely to pay dividends and repurchase shares. Thus, severe negative events are predicted to have enduring imprints on CEOs that affect their psychology in the long run.

If CEOs are constrained by bounded rationality (Cyert & March, 1963), their decisions depend on their attentional focus (Ocasio, 1997). CEOs tend to seek information and focus on environmental aspects that suit their own characteristics and peculiarities (Dearborn & Simon, 1958; Thomas et al., 1991). Kiesler and Sproull (1982) argue that more attention is allocated to salient stimuli or cues. Subsequently, the information contained in these salient stimuli is weighted disproportionately in decision-making processes (Taylor & Thompson, 1982, p. 175). We argue

that past adverse professional experiences make CEOs more susceptible to negative events and thus increase the salience of current bad luck. Consequently, when bad luck is perceived as relatively salient, CEOs' conservative strategic risk-taking reactions are accentuated. We thus hypothesize the following:

Hypothesis 3a. *The reduction in strategic risk-taking following lower levels of CEO luck (bad luck) is accentuated for CEOs who have experienced severe negative professional events.*

In addition to highlighting the impact of negative professional experiences, we propose that the salience of current bad luck is higher for CEOs who have experienced bad luck in the past. Empirical evidence suggests that adverse experiences that occur repeatedly (Ampudia & Ehrmann, 2017) or that are relatively extreme (e.g., Ehrmann & Tzamourani, 2012; He et al., 2018; Ampudia & Ehrmann, 2017) persist longer in people's memories and thus have a strong effect on subsequent behavior. For instance, He et al. (2018) find that auditors who enter the labor market during economic downturns, particularly after relatively severe downturns, issue more audit adjustments and exhibit more professional skepticism. Ampudia and Ehrmann (2017) find that the number of stock market crashes experienced is negatively associated with the willingness to take financial risks.

In the context of CEOs, Cho and Hambrick (2006) and Ocasio (2011) show that CEOs tend to focus on information that fits their prior work experience, which is consistent with the attention-based notion of salience (Wang et al., 2016). Since decision-makers face too many stimuli to understand, CEOs focus on stimuli that they personally care about, are familiar with, or have ready solutions for (Cannella & Holcomb).

Examining the adverse professional experiences of CEOs, both Dittmar and Duchin (2016) and Faulkner et al. (2020) find that experiences that occur repeatedly have stronger negative effects on corporate policies than single negative experiences. This is consistent with the notion that

multiple adverse experiences are perceived as more severe and thus increase the salience of current bad luck (Bordalo et al., 2012; Tversky & Kahneman, 1974).

Therefore, we expect that a CEO's similar past exposure to bad luck accentuates the negative relationship between current bad luck and strategic risk-taking because the alignment of bad past experiences with current bad luck increases the saliency of bad luck:

Hypothesis 3b. *The reduction in strategic risk-taking following lower levels of CEO luck (bad luck) is accentuated for CEOs who have experienced similarly low levels of luck (bad luck) in the past.*

3 METHODS

3.1 DATA AND SAMPLE

Our sample selection process starts with all the U.S. firms in the ExecuComp database between 1992 and 2020. ExecuComp provides compensation data for the top executives of S&P 1500 firms in addition to a few other large publicly traded companies. We focus on industrial firms and exclude firms with SIC codes from 4900 to 4999 (utilities) and 6000 to 6999 (financials), as is the common approach of relevant literature (e.g., Malmendier et al., 2011). For each firm-year observation, we obtain the name of the CEO, CEO characteristics and executive pay information. We collect firm fundamentals from Compustat and stock price data from the Center for Research in Security Prices (CRSP).

We exclude all firm-year observations in which a CEO turnover took place.⁴ After dropping observations for which complete data were unavailable, our main sample comprises 24,153 observations spanning from 1992 to 2020.

⁴ A turnover is identified when the CEO in t differs from the CEO in the previous year ($t-1$). Both firm-years are excluded, given the noisy dynamics around turnovers and given that we cannot cleanly identify the fiscal year in which the turnover took place. Our results remain robust if we include these observations in our analyses.

3.2 DEPENDENT VARIABLE

Our dependent variable is a proxy for strategic risk-taking that reflects the risk behavior undertaken by a CEO on behalf of his or her firm (Gomez-Mejia et al., 2019). Following prior research (e.g., R. J. Campbell et al., 2019; Chatterjee & Hambrick, 2011; Mount & Baer, 2021; Sanders & Hambrick, 2007; Zhu & Chen, 2015), we focus on three major forms of discretionary spending. Specifically, we employ the logarithm of the sum of research and development (R&D) expenditures⁵, capital expenditures and acquisition expenditures (plus 1) as a composite measure of strategic risk-taking because these components are typically substitutes of each other (R. J. Campbell et al., 2019).⁶ Consistent with prior research, we do not scale the three components by firm size but explicitly control for firm size in our analyses, which prevents the issue of spurious correlation common to ratio measures (Wiseman, 2009).

3.3 INDEPENDENT VARIABLE

Our main objective is to test whether and how CEOs' strategic risk choices are influenced by luck. We follow the established literature and decompose firm stock performance into a luck component and a firm-specific performance component (Bertrand & Mullainathan, 2001; Garvey & Milbourn, 2006). Specifically, we follow the approach of Daniel et al. (2020), who decompose firm stock performance into idiosyncratic firm performance and exogenous factors stemming from market performance and firm industry performance at the CEO-firm level.⁷ Consistent with Daniel et al. (2020), we estimate the following equation using monthly stock returns at the firm (*Firm Performance*), industry (*Industry Performance*), and market (*Market Performance*) levels:

⁵ Following prior research, we set missing R&D values to 0 (e.g., Mao & Zhang, 2018; Gentry & Shen, 2013; Hirshleifer et al., 2012).

⁶ Our baseline results are robust to an alternative measure of strategic risk-taking based on a factor analysis of long-term debt, R&D spending and capital expenditures (e.g., Benischke et al., 2019).

⁷ Similar approaches have been applied by Bertrand and Mullainathan (2001), Jenter and Kanaan (2015), Amore and Schwenen (2022) and Al Sabah (2020).

$$Firm\ Performance_{i,m} = \alpha_i + \beta_i \times Industry\ Performance_{j,m} + \delta_i \times Market\ Performance_m + \varepsilon_{i,m} \quad (1)$$

where j corresponds to the industry of firm i and m denotes the month.⁸ The regression is estimated at the firm-CEO level (Execucomp id *co_per_rol*). The idiosyncratic performance component of firm i 's stock performance in month m equals the estimated intercept of equation (1) and the corresponding residual. We follow Daniel et al. (2020) and denote this measure as *Skill*. *Luck* then equals firm stock return less *Skill*. Similar to the approach of Daniel et al. (2020) and Al Sabah (2020), we annualize both *Luck* and *Skill* by taking the average monthly estimates over each fiscal year and multiplying them by 12. Because we estimate equation (1) at the firm-CEO level, we derive different coefficients for each CEO, allowing industry and market sensitivities to vary across the executives. Thus, even if two firms are competitors within the same industry, their *Luck* and *Skill* estimates may not be equal due to the different corresponding sensitivities.⁹

The continuous variable *Luck* measures the exogenous factors affecting a firm's performance. It will be negative when market and/or industry conditions are unfavorable and positive when market and/or industry conditions are favorable. Thus, higher levels of *Luck* indicate more good luck, whereas lower levels of luck indicate more bad luck. To address the notion of good and bad luck explicitly, we define a dummy variable, *Badluck*, which equals 1 if *Luck* is negative and 0 otherwise. Moreover, we construct two semicontinuous variables: *BadluckHalf* equals the absolute value of *Luck* if *Luck* is less than or equal to zero and 0 otherwise. Analogously, *GoodluckHalf* equals *Luck* if *Luck* is greater than zero and 0 otherwise.

⁸ We closely follow Daniel et al. (2020) in estimating luck. We thus use equally weighted returns for the industry and market, include the focal firm's return in industry returns, use a sample of firms from Execucomp with the same 2-digit SIC code as a peer group to derive industry returns, and winsorize the returns at the 1st and 99th percentiles.

⁹ In a further robustness test in Section 4.2, we assume that industry and market sensitivities are the same across all firms and we estimate a pooled regression including all the observations.

3.4 MODERATORS

As explained in Section 2, we are interested in how a CEO's adverse past professional experiences and experiences of bad luck moderate his or her negative strategic risk-taking reactions to low levels of luck (i.e., bad luck). To proxy for a CEO's adverse past professional experience, we focus on two different types of experiences. First, we use major negative exogenous market shocks that some CEOs have witnessed: the financial crisis in 2008 and the terrorist attacks in 2001. There is ample evidence suggesting that both the financial crisis (e.g., Bassett et al., 2014; Bekaert & Hoerova, 2014; Guiso et al., 2018) and 9/11 (Sacco et al., 2003) affected the risk aversion of individuals. Thus, we calculate a dummy variable, *AdverseExp*, which equals 1 for CEOs who held a CEO position at any firm in our sample during 2001 or 2008; this variable remains 1 for all subsequent observations of these CEOs. For all years before these events and for CEOs who were not in office at the time of these events, *AdverseExp* equals 0.

Second, we use information on whether the examined CEOs have experienced financial distress during their careers. We follow related approaches to measuring financial difficulties based on bond ratings (e.g., Almeida et al., 2004; Dittmar & Duchin, 2016; Gilchrist & Himmelberg, 1995). We retrieve domestic long-term issuer credit ratings for the whole set of companies from Compustat. We sort all the firms into annual deciles based on their ratings.¹⁰ Each year, if a firm's rating falls within the lowest decile, it is classified as financially constrained, and all the other firms are classified as unconstrained.¹¹ We then calculate an indicator variable, *ExpFinCon*, which equals 1 if a CEO was at a firm exhibiting financial constraints at least once during her career as CEO (either at the same firm or at another firm in our sample) and 0 otherwise.

Finally, to proxy for past experiences of bad luck, we calculate two additional variables. First, we count the number of years during which each CEO experienced bad luck (excluding luck

¹⁰ We translate the letter grades into numeric ratings on a scale of 1 (D) to 10 (AAA).

¹¹ We fill in missing data with the closest ratings (past or future). Otherwise, we classify such firms as unconstrained. Missing firms are not used to calculate the rating deciles. Since these calculations are based on the whole set of firms in Compustat, we restrict the measure to CEOs experiencing major constraints.

at $t-1$) and denote this variable as *BadluckNum*.¹² Second, we calculate an indicator variable, *BadluckExp*, which equals 1 if the CEO has experienced bad luck in the past and 0 otherwise. Both variables are calculated at the CEO level.¹³

3.5 CONTROL VARIABLES

We include a number of control variables that have been used in previous strategic risk-taking literature. We first include several CEO characteristics. Given that prior work experience may induce differences in the knowledge and abilities of CEOs that influence risk-taking (Wiersema & Bantel, 1992), we control for the age of each CEO (*CEOAge*) and his or her tenure (*Tenure*) in years. In addition, we control for CEO duality since it is related to CEOs' influence on firm behavior (Lim, 2015). The variable *Duality* equals 1 if the CEO is the chairperson of the board and 0 otherwise.

At the CEO level, we also control for compensation-related variables and incentives (Connelly et al., 2020; Kish-Gephart & Campbell, 2015). Specifically, *EquityOwnership* is the ratio of shares held by a firm's CEO excluding options and divided by total shares outstanding. Furthermore, we control for option compensation (*OptionPay*), which is the ratio of option compensation to total compensation. Finally, we also control for total compensation (*TotalPay*; in USD thousands).

We control for several firm characteristics at the firm level. First, we control for firm size (*Size*) because research suggests this factor may affect risk-taking and our outcome variable is based on unscaled components. To reduce skewness, we calculate *Size* as the natural logarithm of total assets. As firms with high debt ratios might not be willing to engage in strategic risk-taking due to financial constraints (Connelly et al., 2020), we include the variable *DebtRatio*, which equals the sum of long-term debt and debt in current liabilities divided by total assets. We further

¹² We opted against using the proportion of bad luck years because we understand the experience of bad luck as an absolute rather than a relative phenomenon.

¹³ Defining these variables on the CEO-firm level does not change our results.

include the variable *CashHolding*, which measures the ratio of cash and cash equivalents to total assets because firms with more cash are more inclined to take risks (Connelly et al., 2020). We control for two different forms of firm performance (R. J. Campbell et al., 2019) by including return on assets (*ROA*), which is defined as net income over total assets, and *Tobin's Q*, which denotes the ratio of market to book value. Finally, we include *FirmAge* as the natural logarithm of the number of years since the firm's first appearance in Compustat plus 1.

3.6 MODEL SPECIFICATION

We winsorize all the variables at the 1% level to account for extreme outliers. Since our data comprise a panel of observations at the firm-CEO level, we employ a firm-CEO fixed effects model ($FirmCEO_{i,c}$). This allows us to control for unobserved but time-invariant differences in strategic risk-taking across the firm i and CEO c combinations. To account for year-specific effects, we also include year fixed effects ($Year_t$). Throughout our analyses, the standard errors are both adjusted for heteroskedasticity and clustered at the firm level to control for potential serial correlation in the idiosyncratic error term of the regression (Wooldridge, 2010).¹⁴ Our baseline model includes a battery of CEO and firm characteristics as outlined above, which are represented by the vectors Z_c and X_i , respectively. Finally, we include $Skill_{i,c}$ as a control variable and $Luck_{i,c}$ as our main independent variable of interest. The explanatory variables are lagged by one year. Hence, our baseline model takes the following form:

$$Strategic\ Risk-Taking_{i,c,t} = Luck_{i,c,t-1} + Skill_{i,c,t-1} + X_{i,t-1} + Z_{c,t-1} + FirmCEO_{i,c} + Year_t + \varepsilon_{i,c,t} \quad (2)$$

¹⁴ Clustering the standard errors at the firm-CEO level does not alter our conclusions.

4 RESULTS

4.1 MAIN RESULTS

Table 1 presents the descriptive statistics and cross-correlations of the variables employed. With a mean of 0.148 and a standard deviation of 0.270, our luck variable is closely aligned with that of Daniel et al. (2020) (mean 0.153 and standard deviation of 0.267). The same holds for our measure of strategic risk-taking, which has a mean of 4.864 and a standard deviation of 1.662, while Mount and Baer (2021) report a mean of 4.21 and a standard deviation of 2.02. All our continuous variables are winsorized at 1% and 99%. In section 4.2, we evaluate the robustness of our results to winsorizing.

----- *Insert Table 1 about here* -----

Table 2 shows the results of our regression models designed to test the influence of CEO luck on strategic risk-taking. Hypothesis 1 proposes a positive relationship between CEO luck and strategic risk-taking. In Model 1 of Table 2, the coefficient of *Luck* is positive and statistically significant ($\beta = 0.066$, $SE = 0.023$, $p = 0.004$). This implies that the more luck in relation to firm performance a CEO experienced in the past year, the greater her willingness is to take on subsequent strategic risk, which provides support for Hypothesis 1.

----- *Insert Table 2 about here* -----

Next, we proceed to test Hypothesis 2, which predicts that lower levels of CEO luck reduce strategic risk-taking to a greater extent than higher levels of CEO luck increase strategic risk-taking. In Model 2 of Table 2, we replace the continuous variable *Luck* with the dichotomous variable *Badluck* to distinguish between lower levels of luck, i.e., bad luck, and higher levels of luck, i.e., good luck. The estimated coefficient of *Badluck* is negative and statistically significant ($\beta = -0.029$, $SE = 0.014$, $p = 0.033$), suggesting that strategic risk-taking is lower in the bad luck domain than in the good luck domain.

To more directly test whether the reduction in strategic risk-taking in the bad luck domain is stronger than the increase in strategic risk-taking in the good luck domain, we include the two variables *BadluckHalf* and *GoodluckHalf* in Model 3 of Table 2. The coefficient of *BadluckHalf* is negative and statistically significant ($\beta = -0.166$, $SE = 0.048$, $p = 0.001$). This result reveals a negative relationship between the level of bad luck and strategic risk-taking, suggesting that CEOs reduce their strategic risk-taking under higher levels of bad luck. On the other hand, the coefficient of *GoodluckHalf* is positive but nonsignificant ($\beta = 0.012$, $SE = 0.028$, $p = 0.661$), suggesting that there is no relationship between increased luck in the good luck domain and strategic risk-taking.¹⁵

Overall, these results show that the level of bad luck is negatively associated with strategic risk-taking, while the level of good luck has no effect. This implies that the relationship found between luck and strategic risk-taking in Model 1 of Table 2 is entirely driven by CEOs' reactions in the bad luck domain. The coefficients of *BadluckHalf* and *GoodluckHalf* are significantly different from each other ($F = 13.95$, $p = 0.0002$), providing supporting evidence for Hypothesis 2.

Table 3 shows the results of our analyses intended to test Hypotheses 3a and 3b. According to Hypothesis 3a, CEO adverse professional experience accentuates the negative effect of bad luck on strategic risk-taking. In Model 1 of Table 3, the interactive effect of *Badluck* and *AdverseExp* is negative and significant ($\beta = -0.057$, $SE = 0.025$, $p = 0.021$), indicating that the negative relationship between bad luck and strategic risk-taking is stronger for CEOs who have previously experienced the 2001 and/or 2008 crises as CEOs. Figure 1 illustrates this interaction.

----- Insert Table 3 about here -----

In Model 2 of Table 3, we employ CEO experiences related to financial distress (*ExpFinCon*) as an alternative proxy for CEO adverse professional experience. The interactive effect of *Badluck*

¹⁵ From a conceptual point of view, Model 3 of Table 2 allows for a similar inference based on a model interacting *Luck* with *Badluck*. For ease of interpretation in relation to the coefficients, we opted for the approach of using the dummy variable *Badluck* (Model 2) alone and semicontinuous measures of good luck and bad luck (Model 3). If we run Model 1 with the interaction term of *Badluck* and *Luck*, our conclusions remain the same.

and *ExpFinCon* is also negative and significant ($\beta = -0.068$, $SE = 0.030$, $p = 0.023$), suggesting that past experiences of financial distress accentuate the negative effect of bad luck on strategic risk-taking. We plot this interaction graphically in Figure 2. Overall, these sets of results support Hypothesis 3a.

Finally, we test whether past experiences of bad luck accentuate the negative effect of bad luck on strategic risk-taking. In Model 3 of Table 3, the interactive effect of *Badluck* and *BadluckExp* is negative and statistically significant ($\beta = -0.069$, $SE = 0.023$, $p = 0.003$). Thus, CEOs who have experienced bad luck at least once during their professional careers shy away even further from strategic risk-taking after these experiences. Figure 3 illustrates this interaction. In Model 4 of Table 3, the moderating factor *BadluckNum* captures a similar concept by measuring the number of years a CEO experienced bad luck while in office at any company in our sample.¹⁶ Again, the interactive effect is negative and statistically significant ($\beta = -0.016$, $SE = 0.008$, $p = 0.047$). These results suggest that past experiences of bad luck accentuate the negative effect of bad luck on strategic risk-taking, providing supporting evidence for Hypothesis 3b.

----- Insert Figure 1, Figure 2, & Figure 3 about here -----

4.2 ROBUSTNESS

To substantiate our results, we perform several robustness tests. First, we check for the sensitivity of the results to different ways of decomposing firm performance into luck- and skill-based components. We follow T. C. Campbell and Thompson (2015) and Garvey and Milbourn (2006) by estimating a pooled regression using all the studied firms, which assumes that industry and market sensitivities are the same for all firms (Daniel et al. (2020)). In other words, instead of estimating the coefficients in equation 1 for each CEO-firm observation separately as is done in our baseline specification, we estimate the coefficients in equation 1 using all the observations in

¹⁶ Our conclusions remain the same when *BadluckNum* and *BadluckExp* are based on experiences of bad luck at the focal company.

our sample. The results regarding Hypotheses 1 and 2 can be found in Appendix I Table A1, and the results regarding Hypotheses 3a and 3b are displayed in Appendix II Table A2.¹⁷ Overall, the results remain very similar.

Second, we vary the model specification and utilize firm fixed effects instead of CEO-firm fixed effects. The results are displayed in Appendix III Table A3 and Appendix IV Table A4; moreover, they remain robust. Finally, we evaluate the sensitivity of our results to the baseline choice of winsorizing at 1%. Our results remain robust if we do not winsorize our variables.

5 DISCUSSION & CONCLUSION

How do CEOs respond to luck? This paper examines whether luck, a prevalent contextual stimulus, affects the strategic risk-taking of CEOs using archival data. We find that CEO luck is positively associated with strategic risk-taking and that this relation manifests solely in the bad luck domain. In other words, our findings show that CEOs reduce their strategic risk-taking under increasing levels of bad luck but do not react to different levels of good luck. This is consistent with our theorizing that lower levels of luck decrease CEOs' risk propensity and that CEOs allocate more attention to bad luck than to good luck. Finally, building on upper echelons and saliency theory, we theorize and show that CEOs who have experienced adverse professional events and CEOs who have previously experienced bad luck exhibit accentuated negative reactions to current bad luck.

5.1 THEORETICAL CONTRIBUTIONS

Our study advances different streams of research. First, we identify luck as a determinant of strategic risk-taking. The relevant literature primarily focuses on how CEO characteristics such as tenure or industry experience affect strategic risk-taking (e.g., Finkelstein & Hambrick, 1990; Simsek, 2007; Zhang, 2008) and how contingencies such as the environmental context or

¹⁷ The results also remain similar if we include executive fixed effects in the pooled regression used to estimate equation 1.

organizational context (see, e.g., Carpenter et al., 2004; Bromiley & Rau, 2016) mediate or moderate these effects. We depart from the previous literature by focusing on luck as a contextual stimulus that is exogenous to firms and CEOs. This addresses the major metacritique of endogeneity underlying upper echelons theory that organizational outcomes or environmental factors might influence the profiles of CEOs who are selected (Neely Jr et al., 2020).

Given the prevalence of luck in different contexts of economic decision-making, it is a particularly important contextual stimulus affecting virtually every economic agent both inside and outside organizations. Through the lens of behavioral strategy, our results suggest that CEOs' reactions to luck are similar to those of laypeople in other economic contexts (e.g., Darke & Freedman, 1997; Jiang et al., 2009; Wohl & Enzle, 2003). This is consistent with the argument that the rational-manager paradigm, which has enjoyed the long-term support of literature, fails to properly account for the investment and financing decisions of CEOs (Guenzel & Malmendier, 2020).

By examining the role of CEO luck in strategic risk-taking, we bridge between the finance and management literature. Luck has been examined extensively in the context of executive compensation, and it is typically found that CEOs are rewarded for good luck (e.g., Bertrand & Mullainathan, 2001; Daniel et al., 2020). However, such literature has only recently started to examine how luck affects organizational outcomes in realms beyond that of compensation. For instance, Jenter and Kanaan (2015) find that CEOs are relatively likely to be dismissed for bad performance beyond their control. In a similar vein, Flepp (2021) finds that corporate boards consider uninformative performance outcome signals in their forced CEO turnover decisions. Amore and Schwenen (2022) find that lucky CEOs have better job opportunities outside their firms and obtain higher compensation when they move to new firms. We extend this stream of literature by showing that luck affects not only board decisions but also actual CEO behavior, including that related to key corporate investment decisions such as research and development, capital, and

acquisition expenditures. Thus, our paper adds the important element of luck to the behavioral strategy research literature.

Furthermore, our findings add to behavioral decision theory in the context of executive behavior. Consistent with literature on loss aversion (e.g., Kahneman & Tversky, 1979) and attention allocation toward negative information (e.g., Baumeister et al., 2001), our results suggest that the differential perception of equally sized good and bad outcomes is important. Negative contextual stimuli are likely to be perceived as more significant than equally positive ones (Baumeister et al., 2001). We acknowledge that the literature on upper echelons, particularly that on past experiences and CEO behavior, already suggests an asymmetric effect between negative and positive experiences and organizational outcomes. Indeed, a range of empirical investigations show that particularly negative events have a strong effect on CEOs' decision-making (e.g., Dittmar & Duchin, 2016; Malmendier et al., 2011; Schoar & Zuo, 2017).¹⁸ Our paper contributes to this literature by showing that such asymmetry is also inherent to CEOs' reactions to good and bad luck. This is an important and novel insight because the contextual stimuli of good and bad luck occur exogenously and are likely to be more prevalent than the selective, one-time past experiences of CEOs.

Finally, adopting the lens of upper echelons theory, we further focus on the role of past professional experiences in dealing with luck. We are the first to examine how the negative professional experiences of CEOs moderate their reactions to luck. Our results suggest that relatively strong behavioral reactions are induced by not only similar past bad luck experiences but also less-related negative experiences such as financial constraints or the major market shocks of 2001 and 2008. This insight provides a more nuanced view of how imprints from past experiences translate to organizational behavior beyond direct effects on corporate policies (e.g.,

¹⁸ The importance of adverse past experiences for human behavior is also found among lay's people (e.g., Cassar et al., 2017; Callen et al., 2014; Cameron & Shah, 2015; Kim & Lee, 2014; Malmendier & Nagel, 2011; Bucciol & Zarri, 2015; Sacco et al., 2003).

Dessaint & Matray, 2017; Dittmar & Duchin, 2016; Malmendier et al., 2011; Schoar & Zuo, 2017). Moreover, Guenzel and Malmendier (2020) argue that traditional corporate governance and economic mechanisms seem to be largely ineffective in terms of fully curbing managerial biases. Thus, our paper contributes to the crucial understanding of which CEO characteristics accentuate undesirable behavioral responses.

5.2 PRACTICAL IMPLICATIONS

From a practical perspective, our findings highlight the importance of contextual stimuli for CEOs' strategic decision-making. Although luck is exogenous to firms and CEOs and thus not manageable per se, responses to luck are. Thus, an increasing awareness of CEOs' behavioral responses to luck might prove to be helpful in improving future decision-making. The psychological literature proposes two fundamental approaches to debiasing: "modifying the decision maker" or "modifying the environment" (Soll et al., 2014), which might both be of practical value in terms of curbing the adverse effects of responses to bad luck.

According to the former approach, i.e., "modifying the decision maker" (Soll et al., 2014), education enables people to enhance their decision-making. Although most CEOs have undergone extensive academic education, domain-specific training on decision tasks might make a difference in this context. Alternatively, the use of cognitive strategies or more data-driven approaches for decision-making might help CEOs interpret bad luck situations more objectively.

In the spirit of the latter approach, i.e., "modifying the environment" (Soll et al., 2014), our findings have implications for institutional features designed to curb adverse behavior within firms. For instance, stricter oversight of the board or stronger incentives might help improve decision making. Furthermore, as past professional experiences accentuate negative strategic risk-taking reactions to bad luck, boards should consider candidates' adverse professional experiences when selecting a new CEO.

5.3 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

As with all empirical studies, our investigation is not free of limitations. First, luck cannot be directly observed and must be estimated. We follow the latest research in building our luck measures at the CEO-firm level, considering that executives' sensitivity to exogenous factors might vary. This approach should provide more accurate estimates of skill and luck (Daniel et al., 2020). However, it is not clear whether CEOs interpret luck accordingly, and some measurement error is likely to remain. In addition, our investigation focuses on CEOs only. However, other members of the top management team (TMT) might also play an important role in evaluations of good or bad luck situations for subsequent decision-making.

We envisage different paths that may prove fruitful for subsequent research. While we provide evidence that past experiences accentuate CEOs' negative risk-taking responses to bad luck, we do not examine factors that attenuate this response. Thus, the question of how the potential adverse consequences of behavioral decision-making can be curbed remains open for future research. Moreover, CEO luck may play a pivotal role in other strategic actions, such as those related to strategic scope (e.g., international diversification) or strategic change. Shedding light on the different ways in which luck shapes corporate decision-making will contribute to our understanding of why some firms are more successful than others.

REFERENCES

- Al Sabah, T. (2020). CEO power and luck: Impact of stock markets on building powerful CEOs. *Available at SSRN*. Advance online publication. <https://doi.org/10.2139/ssrn.3675755>
- Almeida, H., Campello, M., & Weisbach, M. S. (2004). The cash flow sensitivity of cash. *The Journal of Finance*, 59(4), 1777–1804. <https://doi.org/10.1111/j.1540-6261.2004.00679.x>
- Amore, M. D., & Schwenen, S. (2022). Hiring Lucky CEOs. *Available at SSRN 3613544*. Advance online publication. <https://doi.org/10.2139/ssrn.3613544>
- Ampudia, M., & Ehrmann, M. (2017). Macroeconomic experiences and risk taking of euro area households. *European Economic Review*, 91, 146–156. <https://doi.org/10.1016/j.euroecorev.2016.09.012>
- Bai, X., Tsang, E. W., & Xia, W. (2020). Domestic versus foreign listing: Does a CEO's educational experience matter? *Journal of Business Venturing*, 35(1), 105906. <https://doi.org/10.1016/j.jbusvent.2018.10.004>
- Bassett, W. F., Chosak, M. B., Driscoll, J. C., & Zakrajšek, E. (2014). Changes in bank lending standards and the macroeconomy. *Journal of Monetary Economics*, 62, 23–40. <https://doi.org/10.1016/j.jmoneco.2013.12.005>
- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, 5(4), 323–370. <https://doi.org/10.1037/1089-2680.5.4.323>
- Bekaert, G., & Hoerova, M. (2014). The VIX, the variance premium and stock market volatility. *Journal of Econometrics*, 183(2), 181–192. <https://doi.org/10.1016/j.jeconom.2014.05.008>
- Benischke, M. H., Martin, G. P., & Glaser, L. (2019). CEO equity risk bearing and strategic risk taking: The moderating effect of CEO personality. *Strategic Management Journal*, 40(1), 153–177. <https://doi.org/10.1002/smj.2974>
- Bertrand, M., & Mullainathan, S. (2001). Are CEOs rewarded for luck? The ones without principals are. *The Quarterly Journal of Economics*, 116(3), 901–932. <https://doi.org/10.1162/00335530152466269>
- Bianchi, E. C. (2014). Entering adulthood in a recession tempers later narcissism. *Psychological Science*, 25(7), 1429–1437. <https://doi.org/10.1177/0956797614532818>
- Bordalo, P., Gennaioli, N., & Shleifer, A. (2012). Salience theory of choice under risk. *The Quarterly Journal of Economics*, 127(3), 1243–1285. <https://doi.org/10.1093/qje/qjs018>
- Bromiley, P., & Rau, D. (2016). Social, behavioral, and cognitive influences on upper echelons during strategy process: A literature review. *Journal of Management*, 42(1), 174–202. <https://doi.org/10.1177/0149206315617240>
- Buccioli, A., & Zarri, L. (2015). The shadow of the past: Financial risk taking and negative life events. *Journal of Economic Psychology*, 48, 1–16. <https://doi.org/10.1016/j.joep.2015.02.006>

- Callen, M., Isaqzadeh, M., Long, J. D., & Sprenger, C. (2014). Violence and risk preference: Experimental evidence from Afghanistan. *American Economic Review*, 104(1), 123–148. <https://doi.org/10.1257/aer.104.1.123>
- Cameron, L., & Shah, M. (2015). Risk-taking behavior in the wake of natural disasters. *Journal of Human Resources*, 50(2), 484–515. <https://doi.org/10.3368/jhr.50.2.484>
- Campbell, R. J., Jeong, S.-H., & Graffin, S. D. (2019). Born to take risk? The effect of CEO birth order on strategic risk taking. *Academy of Management Journal*, 62(4), 1278–1306. <https://doi.org/10.5465/amj.2017.0790>
- Campbell, T. C., & Thompson, M. E. (2015). Why are CEOs paid for good luck? An empirical comparison of explanations for pay-for-luck asymmetry. *Journal of Corporate Finance*, 35, 247–264. <https://doi.org/10.1016/j.jcorpfin.2015.09.006>
- Cannella, A. A., & Holcomb, T. R. A multi-level analysis of the upper-echelons model. In *Multi-level issues in strategy and methods*. [https://doi.org/10.1016/S1475-9144\(05\)04009-9](https://doi.org/10.1016/S1475-9144(05)04009-9)
- Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, 30(6), 749–778. <https://doi.org/10.1016/j.jm.2004.06.001>
- Cassar, A., Healy, A., & Kessler, C. von (2017). Trust, risk, and time preferences after a natural disaster: experimental evidence from Thailand. *World Development*, 94, 90–105. <https://doi.org/10.1016/j.worlddev.2016.12.042>
- Chatterjee, A., & Hambrick, D. C. (2011). Executive personality, capability cues, and risk taking: How narcissistic CEOs react to their successes and stumbles. *Administrative Science Quarterly*, 56(2), 202–237. <https://doi.org/10.1177/0001839211427534>
- Chiang, Y.-M., Hirshleifer, D., Qian, Y., & Sherman, A. E. (2011). Do investors learn from experience? Evidence from frequent IPO investors. *The Review of Financial Studies*, 24(5), 1560–1589. <https://doi.org/10.1093/rfs/hhq151>
- Cho, T. S., & Hambrick, D. C. (2006). Attention as the mediator between top management team characteristics and strategic change: The case of airline deregulation. *Organization Science*, 17(4), 453–469. <https://doi.org/10.1287/orsc.1060.0192>
- Connelly, B. L., Li, Q., Shi, W., & Lee, K.-B. (2020). CEO dismissal: Consequences for the strategic risk taking of competitor CEOs. *Strategic Management Journal*, 41(11), 2092–2125. <https://doi.org/10.1002/smj.3190>
- Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm* (Vol. 4). Prentice-Hall.
- Daniel, N. D., Li, Y., & Naveen, L. (2020). Symmetry in pay for luck. *The Review of Financial Studies*, 33(7), 3174–3204. <https://doi.org/10.1093/rfs/hhz057>
- Darke, P. R., & Freedman, J. L. (1997). Lucky events and beliefs in luck: Paradoxical effects on confidence and risk-taking. *Personality and Social Psychology Bulletin*, 23(4), 378–388. <https://doi.org/10.1177/0146167297234004>
- Dearborn, D. C., & Simon, H. A. (1958). Selective perception: A note on the departmental identifications of executives. *Sociometry*, 21(2), 140–144. <https://doi.org/10.2307/2785898>

- Dessaint, O., & Matray, A. (2017). Do managers overreact to salient risks? Evidence from hurricane strikes. *Journal of Financial Economics*, 126(1), 97–121. <https://doi.org/10.1016/j.jfineco.2017.07.002>
- Dittmar, A., & Duchin, R. (2016). Looking in the rearview mirror: The effect of managers' professional experience on corporate financial policy. *The Review of Financial Studies*, 29(3), 565–602. <https://doi.org/10.1093/rfs/hhv051>
- Eckel, C. C., El-Gamal, M. A., & Wilson, R. K. (2009). Risk loving after the storm: A Bayesian-Network study of Hurricane Katrina evacuees. *Journal of Economic Behavior & Organization*, 69(2), 110–124. <https://doi.org/10.1016/j.jebo.2007.08.012>
- Ehrmann, M., & Tzamourani, P. (2012). Memories of high inflation. *European Journal of Political Economy*, 28(2), 174–191. <https://doi.org/10.1016/j.ejpoleco.2011.11.005>
- Faulkner, M., Frost, T., & García-Feijóo, L. (2020). The Impact of CEO Past Corporate Experiences on Accounting Conservatism. *Available at SSRN 3985114*. Advance online publication. <https://doi.org/10.2139/ssrn.3985114>
- Faulkner, M., & García-Feijóo, L. (2021). Hot-Stove Effects: The Impact of CEO Past Corporate Experiences on Dividend Policy. *Journal of Financial and Quantitative Analysis*, 1–50. <https://doi.org/10.1017/S002210902100034X>
- Feather, N. T. (1966). Effects of prior success and failure on expectations of success and subsequent performance. *Journal of Personality and Social Psychology*, 3(3), 287. <https://doi.org/10.1037/h0022965>
- Finkelstein, S., & Hambrick, D. C. (1990). Top-Management-Team Tenure and Organizational Outcomes: The Moderating Role of Managerial Discretion. *Administrative Science Quarterly*, 35(3), 484. <https://doi.org/10.2307/2393314>
- Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology*, 38(6), 889. <https://doi.org/10.1037/0022-3514.38.6.889>
- Flepp, R. (2021). Uninformative Performance Signals and Forced CEO Turnover. *Available at SSRN 3904056*. Advance online publication. <https://doi.org/10.2139/ssrn.3904056>
- Fu, R., Tang, Y., & Chen, G. (2020). Chief sustainability officers and corporate social (Ir) responsibility. *Strategic Management Journal*, 41(4), 656–680. <https://doi.org/10.1002/smj.3113>
- Garvey, G. T., & Milbourn, T. T. (2006). Asymmetric benchmarking in compensation: Executives are rewarded for good luck but not penalized for bad. *Journal of Financial Economics*, 82(1), 197–225. <https://doi.org/10.1016/j.jfineco.2004.01.006>
- Gentry, R. J., & Shen, W. (2013). The impacts of performance relative to analyst forecasts and analyst coverage on firm R&D intensity. *Strategic Management Journal*, 34(1), 121–130. <https://doi.org/10.1002/smj.1997>
- Gilchrist, S., & Himmelberg, C. P. (1995). Evidence on the role of cash flow for investment. *Journal of Monetary Economics*, 36(3), 541–572. [https://doi.org/10.1016/0304-3932\(95\)01223-0](https://doi.org/10.1016/0304-3932(95)01223-0)
- Gilovich, T., Vallone, R., & Tversky, A. (1985). The hot hand in basketball: On the misperception of random sequences. *Cognitive Psychology*, 17(3), 295–314. [https://doi.org/10.1016/0010-0285\(85\)90010-6](https://doi.org/10.1016/0010-0285(85)90010-6)

- Gomez-Mejia, L. R., Neacsu, I., & Martin, G. (2019). CEO risk-taking and socioemotional wealth: The behavioral agency model, family control, and CEO option wealth. *Journal of Management*, 45(4), 1713–1738. <https://doi.org/10.1177/0149206317723711>
- Greenwood, R., & Nagel, S. (2009). Inexperienced investors and bubbles. *Journal of Financial Economics*, 93(2), 239–258. <https://doi.org/10.1016/j.jfineco.2008.08.004>
- Guenzel, M., & Malmendier, U. (2020). Behavioral corporate finance: The life cycle of a CEO career. *National Bureau of Economic Research Working Paper Series*.
- Guiso, L., Sapienza, P., & Zingales, L. (2018). Time varying risk aversion. *Journal of Financial Economics*, 128(3), 403–421. <https://doi.org/10.1016/j.jfineco.2018.02.007>
- Hahn, U., & Warren, P. A. (2009). Perceptions of randomness: why three heads are better than four. *Psychological Review*, 116(2), 454. <https://doi.org/10.1037/a0015241>
- Hambrick, D. C. (2007). *Upper echelons theory: An update* (No. 2). Academy of Management Briarcliff Manor, NY 10510, 32.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206. <https://doi.org/10.5465/amr.1984.4277628>
- Hansen, C. H., & Hansen, R. D. (1988). Finding the face in the crowd: an anger superiority effect. *Journal of Personality and Social Psychology*, 54(6), 917. <https://doi.org/10.1037/0022-3514.54.6.917>
- He, X., Kothari, S. P., Xiao, T., & Zuo, L. (2018). Long-term impact of economic conditions on auditors' judgment. *The Accounting Review*, 93(6), 203–229. <https://doi.org/10.2308/accr-52009>
- Hirshleifer, D., Low, A., & Teoh, S. H. (2012). Are overconfident CEOs better innovators? *The Journal of Finance*, 67(4), 1457–1498. <https://doi.org/10.1111/j.1540-6261.2012.01753.x>
- Hoskisson, R. E., Chirico, F., Zyung, J., & Gambeta, E. (2017). Managerial risk taking: A multitheoretical review and future research agenda. *Journal of Management*, 43(1), 137–169. <https://doi.org/10.1177/0149206316671583>
- Howe, E. W. (1911). *Country Town Sayings: A Collection of Paragraphs from the Atchison Globe*. Crane.
- Hu, J., Long, W., Tian, G. G., & Yao, D. (2020). CEOs' experience of the Great Chinese Famine and accounting conservatism. *Journal of Business Finance & Accounting*, 47(9-10), 1089–1112. <https://doi.org/10.1111/jbfa.12485>
- Ito, T. A., Larsen, J. T., Smith, N. K., & Cacioppo, J. T. (1998). Negative information weighs more heavily on the brain: the negativity bias in evaluative categorizations. *Journal of Personality and Social Psychology*, 75(4), 887. <https://doi.org/10.1037/0022-3514.75.4.887>
- Jenter, D., & Kanaan, F. (2015). CEO turnover and relative performance evaluation. *The Journal of Finance*, 70(5), 2155–2184. <https://doi.org/10.1111/jofi.12282>
- Jiang, Y., Cho, A., & Adaval, R. (2009). The unique consequences of feeling lucky: Implications for consumer behavior. *Journal of Consumer Psychology*, 19(2), 171–184. <https://doi.org/10.1016/j.jcps.2009.02.010>

- Jung, J., & Shin, T. (2019). Learning not to diversify: The transformation of graduate business education and the decline of diversifying acquisitions. *Administrative Science Quarterly*, 64(2), 337–369. <https://doi.org/10.1177/0001839218768520>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 363–391. https://doi.org/10.1142/9789814417358_0006
- Kahneman, D., & Tversky, A. (2013). Choices, values, and frames. In *Handbook of the fundamentals of financial decision making: Part I* (pp. 269–278). World Scientific. https://doi.org/10.1142/9789814417358_0016
- Kaustia, M., & Knüpfer, S. (2008). Do investors overweight personal experience? Evidence from IPO subscriptions. *The Journal of Finance*, 63(6), 2679–2702. <https://doi.org/10.1111/j.1540-6261.2008.01411.x>
- Kempf, A., Ruenzi, S., & Thiele, T. (2009). Employment risk, compensation incentives, and managerial risk taking: Evidence from the mutual fund industry. *Journal of Financial Economics*, 92(1), 92–108. <https://doi.org/10.1016/j.jfineco.2008.05.001>
- Kiesler, S., & Sproull, L. (1982). Managerial response to changing environments: Perspectives on problem sensing from social cognition. *Administrative Science Quarterly*, 548–570. <https://doi.org/10.2307/2392530>
- Kim, Y.-I., & Lee, J. (2014). The long-run impact of a traumatic experience on risk aversion. *Journal of Economic Behavior & Organization*, 108, 174–186. <https://doi.org/10.1016/j.jebo.2014.09.009>
- Kish-Gephart, J. J., & Campbell, J. T. (2015). You don't forget your roots: The influence of CEO social class background on strategic risk taking. *Academy of Management Journal*, 58(6), 1614–1636. <https://doi.org/10.5465/amj.2013.1204>
- Koudijs, P., & Voth, H.-J. (2016). Leverage and beliefs: personal experience and risk-taking in margin lending. *American Economic Review*, 106(11), 3367–3400. <https://doi.org/10.1257/aer.20140259>
- Kuhnen, C. M. (2015). Asymmetric learning from financial information. *The Journal of Finance*, 70(5), 2029–2062. <https://doi.org/10.1111/jofi.12223>
- Lim, E. N. K. (2015). The role of reference point in CEO restricted stock and its impact on R&D intensity in high-technology firms. *Strategic Management Journal*, 36(6), 872–889. <https://doi.org/10.1002/smj.2252>
- Malmendier, U., & Nagel, S. (2011). Depression babies: do macroeconomic experiences affect risk taking? *The Quarterly Journal of Economics*, 126(1), 373–416. <https://doi.org/10.1093/qje/qjq004>
- Malmendier, U., Tate, G., & Yan, J. (2011). Overconfidence and early-life experiences: the effect of managerial traits on corporate financial policies. *The Journal of Finance*, 66(5), 1687–1733. <https://doi.org/10.1111/j.1540-6261.2011.01685.x>
- Mao, C. X., & Zhang, C. (2018). Managerial risk-taking incentive and firm innovation: Evidence from FAS 123R. *Journal of Financial and Quantitative Analysis*, 53(2), 867–898. <https://doi.org/10.1017/S002210901700120X>
- Marquis, C., & Qiao, K. (2020). Waking from Mao's Dream: Communist Ideological Imprinting and the Internationalization of Entrepreneurial Ventures in China. *Administrative Science Quarterly*, 65(3), 795–830. <https://doi.org/10.1177/0001839218792837>

- Mount, M. P., & Baer, M. (2021). CEOs' regulatory focus and risk-taking when firms perform below and above the bar. *Journal of Management*, 01492063211016029. <https://doi.org/10.1177/01492063211016029>
- Neely Jr, B. H., Lovelace, J. B., Cowen, A. P., & Hiller, N. J. (2020). Metacritiques of upper echelons theory: Verdicts and recommendations for future research. *Journal of Management*, 46(6), 1029–1062. <https://doi.org/10.1177/0149206320908640>
- Nisbett, R. E., & Ross, L. (1980). Human inference: Strategies and shortcomings of social judgment. Advance online publication. <https://doi.org/10.2307/2184495>
- Ocasio, W. (2011). Attention to attention. *Organization Science*, 22(5), 1286–1296. <https://doi.org/10.1287/orsc.1100.0602>
- O'Sullivan, D., Zolotoy, L., & Fan, Q. (2021). CEO early-life disaster experience and corporate social performance. *Strategic Management Journal*. Advance online publication. <https://doi.org/10.1002/smj.3293>
- Pratto, F., & John, O. P. (1991). Automatic vigilance: the attention-grabbing power of negative social information. *Journal of Personality and Social Psychology*, 61(3), 380. <https://doi.org/10.1037/0022-3514.61.3.380>
- Quigley, T. J., & Hambrick, D. C. (2015). Has the “CEO effect” increased in recent decades? A new explanation for the great rise in America's attention to corporate leaders. *Strategic Management Journal*, 36(6), 821–830. <https://doi.org/10.1002/smj.2258>
- Sacco, K., Galletto, V., & Blanzieri, E. (2003). How has the 9/11 terrorist attack influenced decision making? *Applied Cognitive Psychology*, 17(9), 1113–1127. <https://doi.org/10.1002/acp.989>
- Sanders, W. G., & Hambrick, D. C. (2007). Swinging for the fences: The effects of CEO stock options on company risk taking and performance. *Academy of Management Journal*, 50(5), 1055–1078. <https://doi.org/10.5465/amj.2007.27156438>
- Schoar, A., & Zuo, L. (2017). Shaped by booms and busts: How the economy impacts CEO careers and management styles. *The Review of Financial Studies*, 30(5), 1425–1456. <https://doi.org/10.1093/rfs/hhw111>
- Simsek, Z. (2007). CEO tenure and organizational performance: An intervening model. *Strategic Management Journal*, 28(6), 653–662. <https://doi.org/10.1002/smj.599>
- Sitkin, S. B., & Weingart, L. R. (1995). Determinants of risky decision-making behavior: A test of the mediating role of risk perceptions and propensity. *Academy of Management Journal*, 38(6), 1573–1592. <https://doi.org/10.5465/256844>
- Smith, N. K., Larsen, J. T., Chartrand, T. L., Cacioppo, J. T., Katafiasz, H. A., & Moran, K. E. (2006). Being bad isn't always good: affective context moderates the attention bias toward negative information. *Journal of Personality and Social Psychology*, 90(2), 210. <https://doi.org/10.1037/0022-3514.90.2.210>
- Soll, J. B., Milkman, K. L., & Payne, J. W. (2014). A user's guide to debiasing.
- Souder, D., & Bromiley, P. (2012). Explaining temporal orientation: Evidence from the durability of firms' capital investments. *Strategic Management Journal*, 33(5), 550–569. <https://doi.org/10.1002/smj.970>
- Taylor, S. E., & Thompson, S. C. (1982). Stalking the elusive" vividness" effect. *Psychological Review*, 89(2), 155. <https://doi.org/10.1037/0033-295X.89.2.155>

- Thaler, R. H., & Johnson, E. J. (1990). Gambling with the house money and trying to break even: The effects of prior outcomes on risky choice. *Management Science*, 36(6), 643–660. <https://doi.org/10.1287/mnsc.36.6.643>
- Thomas, A. S., Litschert, R. J., & Ramaswamy, K. (1991). The performance impact of strategy-manager coalignment: An empirical examination. *Strategic Management Journal*, 12(7), 509–522. <https://doi.org/10.1002/smj.4250120704>
- Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and biases: Biases in judgments reveal some heuristics of thinking under uncertainty. *Science*, 185(4157), 1124–1131.
- Voors, M. J., Nillesen, E. E. M., Verwimp, P., Bulte, E. H., Lensink, R., & van Soest, D. P. (2012). Violent conflict and behavior: a field experiment in Burundi. *American Economic Review*, 102(2), 941–964. <https://doi.org/10.1257/aer.102.2.941>
- Wang, G., Holmes Jr, R. M., Oh, I.-S., & Zhu, W. (2016). Do CEOs matter to firm strategic actions and firm performance? A meta-analytic investigation based on upper echelons theory. *Personnel Psychology*, 69(4), 775–862. <https://doi.org/10.1111/peps.12140>
- Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal*, 35(1), 91–121. <https://doi.org/10.5465/256474>
- Wiseman, R. M. (2009). On the use and misuse of ratios in strategic management research. In *Research methodology in strategy and management*. Emerald Group Publishing Limited. [https://doi.org/10.1108/S1479-8387\(2009\)00000005004](https://doi.org/10.1108/S1479-8387(2009)00000005004)
- Wohl, M. J. A., & Enzle, M. E. (2003). The effects of near wins and near losses on self-perceived personal luck and subsequent gambling behavior. *Journal of Experimental Social Psychology*, 39(2), 184–191. [https://doi.org/10.1016/S0022-1031\(02\)00525-5](https://doi.org/10.1016/S0022-1031(02)00525-5)
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT press.
- Zhang, Y. (2008). Information asymmetry and the dismissal of newly appointed CEOs: An empirical investigation. *Strategic Management Journal*, 29(8), 859–872. <https://doi.org/10.1002/smj.689>
- Zhu, D. H., & Chen, G. (2015). Narcissism, director selection, and risk-taking spending. *Strategic Management Journal*, 36(13), 2075–2098. <https://doi.org/10.1002/smj.2322>

Table 1: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 Strategic Risk-Taking	4.86	1.66	1.00																					
2 Luck	0.15	0.27	-0.01	1.00																				
3 Badluck	0.24	0.43	-0.04	-0.69	1.00																			
4 BadluckHalf	0.05	0.13	-0.06	-0.66	0.63	1.00																		
5 GoodluckHalf	0.19	0.22	-0.04	0.89	-0.49	-0.31	1.00																	
6 BadluckExp	0.54	0.50	0.01	0.08	-0.07	-0.04	0.08	1.00																
7 BadluckNum	0.96	1.23	0.01	0.06	-0.05	-0.03	0.06	0.73	1.00															
8 AdverseExp	0.45	0.50	-0.02	-0.04	0.06	0.12	0.01	0.54	0.53	1.00														
9 ExpFinCon	0.14	0.35	-0.04	0.03	0.03	0.06	0.08	0.05	0.11	0.07	1.00													
10 Skill	0.03	0.33	0.04	-0.03	0.02	-0.01	-0.03	-0.02	-0.02	-0.02	-0.01	1.00												
11 Size	7.23	1.56	0.80	-0.07	0.01	-0.01	-0.10	0.07	0.09	0.02	-0.02	-0.02	1.00											
12 ROA	0.04	0.11	0.15	0.02	-0.08	-0.17	-0.07	-0.02	-0.01	-0.03	-0.11	0.19	0.13	1.00										
13 Tobin's Q	2.16	1.43	0.01	0.16	-0.14	-0.15	0.13	-0.07	-0.08	-0.05	-0.08	0.29	-0.19	0.23	1.00									
14 CashHolding	0.16	0.18	-0.18	0.09	-0.03	-0.01	0.12	0.01	0.02	0.09	0.01	0.05	-0.35	-0.10	0.40	1.00								
15 DebtRatio	0.22	0.19	0.18	-0.04	0.04	0.05	-0.02	0.02	0.03	-0.06	0.23	-0.04	0.33	-0.15	-0.18	-0.37	1.00							
16 FirmAge	3.08	0.70	0.28	-0.07	-0.01	-0.05	-0.12	0.13	0.16	0.08	-0.05	-0.03	0.40	0.08	-0.19	-0.25	0.10	1.00						
17 Tenure	8.05	7.13	-0.10	0.01	-0.02	-0.03	0.00	0.34	0.46	0.33	0.03	-0.01	-0.10	0.04	0.05	0.07	-0.08	-0.01	1.00					
18 CEOAge	56.01	7.09	0.04	-0.01	-0.03	-0.04	-0.04	0.18	0.25	0.15	0.02	-0.01	0.11	0.06	-0.07	-0.11	0.05	0.20	0.40	1.00				
19 Duality	0.48	0.50	0.11	0.00	-0.02	-0.04	-0.02	0.05	0.03	0.01	-0.07	0.00	0.13	0.07	-0.04	-0.16	0.04	0.13	0.15	0.21	1.00			
20 TotalPay	4823.31	5322.18	0.53	-0.03	0.00	0.00	-0.03	0.07	0.08	0.06	-0.01	0.04	0.60	0.10	0.08	-0.06	0.13	0.18	-0.03	0.07	0.08	1.00		
21 OptionPay	0.24	0.27	0.09	0.02	0.02	0.01	0.04	-0.11	-0.13	-0.04	-0.05	-0.02	-0.02	-0.03	0.14	0.12	-0.07	-0.12	-0.07	-0.12	0.09	0.16	1.00	
22 EquityOwn.	0.03	0.06	-0.20	0.01	-0.01	-0.02	0.00	0.06	0.09	0.05	-0.01	0.01	-0.21	0.04	0.06	0.09	-0.12	-0.15	0.39	0.16	0.09	-0.14	-0.12	1.00

Notes: N = 24,153. Summary statistics and pairwise correlations of the variables are employed.

Table 2: Main Results

Dependent Variable: Strategic Risk-Taking									
	Model 1			Model 2			Model 3		
	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value
Luck	0.066	0.023	0.004	-	-	-	-	-	-
Badluck	-	-	-	-0.029	0.014	0.033	-	-	-
BadluckHalf	-	-	-	-	-	-	-0.166	0.048	0.001
GoodluckHalf	-	-	-	-	-	-	0.012	0.028	0.661
Skill	-0.004	0.016	0.812	-0.005	0.016	0.756	-0.004	0.016	0.807
Size	0.568	0.025	0.000	0.568	0.025	0.000	0.568	0.025	0.000
ROA	0.922	0.073	0.000	0.928	0.073	0.000	0.907	0.073	0.000
Tobin's Q	0.089	0.008	0.000	0.091	0.008	0.000	0.090	0.008	0.000
CashHolding	0.727	0.086	0.000	0.728	0.086	0.000	0.726	0.086	0.000
DebtRatio	-1.106	0.079	0.000	-1.108	0.079	0.000	-1.106	0.079	0.000
FirmAge	0.208	0.071	0.004	0.208	0.071	0.004	0.206	0.071	0.004
Tenure	0.023	0.008	0.008	0.023	0.008	0.007	0.023	0.008	0.008
CEOAge	0.009	0.014	0.531	0.009	0.014	0.540	0.008	0.014	0.550
Duality	0.008	0.023	0.744	0.007	0.023	0.750	0.007	0.023	0.753
TotalPay	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OptionPay	-0.058	0.027	0.032	-0.058	0.027	0.031	-0.058	0.027	0.032
EquityOwn	-0.640	0.256	0.012	-0.635	0.255	0.013	-0.639	0.257	0.013
Constant	-0.686	0.838	0.413	-0.664	0.840	0.430	-0.641	0.841	0.446
Firm-CEO FE	Yes			Yes			Yes		
Year FE	Yes			Yes			Yes		
Observations	24,153			24,153			24,153		
R-Squared	0.888			0.888			0.888		

Notes: Results are for two-tailed tests. Year and Firm-CEO dummies are included in all regressions. Standard errors are clustered at the firm level.

Table 3: Interaction Effects

Dependent Variable: Strategic Risk-Taking												
	Model 1			Model 2			Model 3			Model 4		
	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value
Badluck	-0.004	0.017	0.797	-0.018	0.014	0.214	0.006	0.021	0.762	-0.059	0.019	0.002
AdverseExp	0.068	0.042	0.107	-	-	-	-	-	-	-	-	-
Badluck x AdverseExp	-0.057	0.025	0.021	-	-	-	-	-	-	-	-	-
ExpFinCon	-	-	-	-0.205	0.066	0.002	-	-	-	-	-	-
Badluck x ExpFinCon	-	-	-	-0.068	0.030	0.023	-	-	-	-	-	-
BadluckExp	-	-	-	-	-	-	0.016	0.024	0.507	-	-	-
Badluck x BadluckExp	-	-	-	-	-	-	-0.069	0.023	0.003	-	-	-
BadluckNum	-	-	-	-	-	-	-	-	-	-0.082	0.018	0.000
Badluck x BadluckNum	-	-	-	-	-	-	-	-	-	-0.016	0.008	0.047
Skill	-0.005	0.016	0.753	-0.001	0.016	0.923	-0.005	0.016	0.754	0.001	0.016	0.953
Size	0.568	0.025	0.000	0.562	0.025	0.000	0.568	0.025	0.000	0.553	0.025	0.000
ROA	0.927	0.073	0.000	0.932	0.073	0.000	0.924	0.073	0.000	0.918	0.073	0.000
Tobin's Q	0.091	0.008	0.000	0.090	0.008	0.000	0.092	0.008	0.000	0.085	0.008	0.000
CashHolding	0.734	0.086	0.000	0.730	0.086	0.000	0.729	0.086	0.000	0.727	0.087	0.000
DebtRatio	-1.107	0.079	0.000	-1.097	0.078	0.000	-1.108	0.079	0.000	-1.095	0.078	0.000
FirmAge	0.202	0.071	0.004	0.227	0.071	0.001	0.209	0.071	0.003	0.194	0.071	0.007
Tenure	0.022	0.008	0.010	0.022	0.008	0.006	0.023	0.008	0.007	0.027	0.009	0.002
CEOAge	0.009	0.014	0.511	0.007	0.014	0.609	0.009	0.014	0.536	0.009	0.014	0.495
Duality	0.005	0.023	0.839	0.009	0.023	0.710	0.007	0.023	0.756	0.011	0.024	0.644
TotalPay	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OptionPay	-0.057	0.027	0.035	-0.061	0.027	0.024	-0.058	0.027	0.032	-0.060	0.027	0.027
EquityOwn	-0.631	0.254	0.013	-0.662	0.253	0.009	-0.641	0.255	0.012	-0.624	0.257	0.015
Constant	-0.696	0.840	0.407	-0.555	0.824	0.501	-0.676	0.839	0.420	-0.482	0.815	0.555
Firm-CEO FE	Yes			Yes			Yes			Yes		
Year FE	Yes			Yes			Yes			Yes		
Observations	24,153			24,153			24,153			24,153		
R-Squared	0.888			0.888			0.888			0.888		

Notes: Results are for two-tailed tests. Year and Firm-CEO dummies are included in all regressions. Standard errors are clustered at the firm level.

Figure 1: Interaction of Bad Luck and Past Adverse Experience

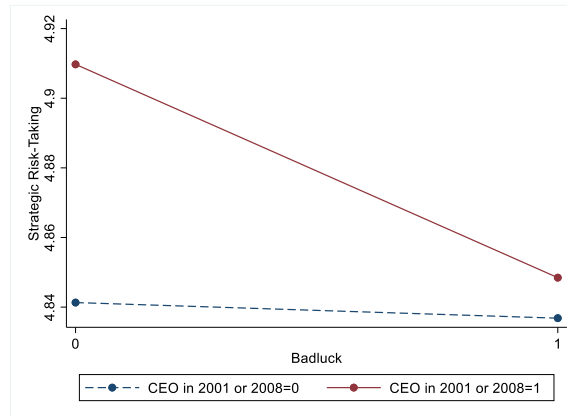


Figure 2: Interaction of Bad Luck and Past Experiences of Financial Constraints

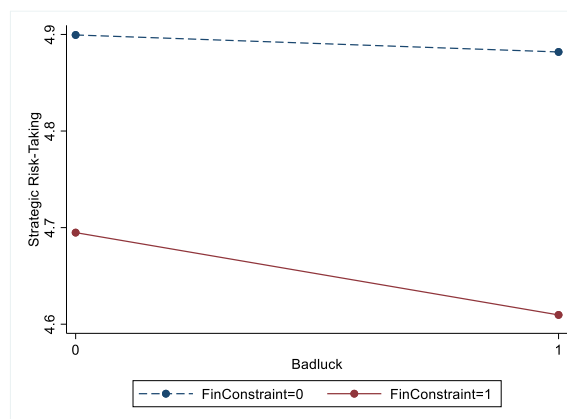
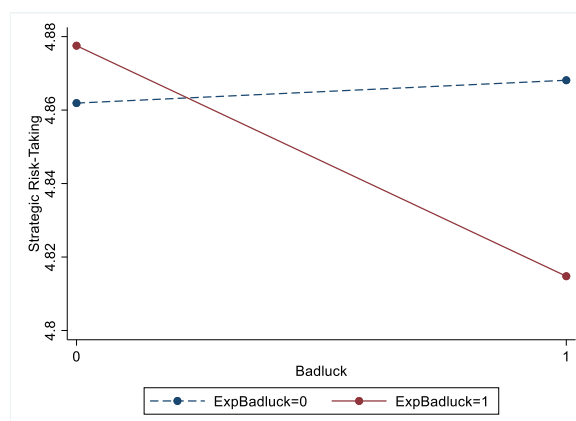


Figure 3: Interaction of Bad Luck and Past Experiences of Bad Luck



APPENDIX I

Table A1: Robustness to Luck Measurement – Main Results

Dependent Variable: Strategic Risk-Taking									
	Model 1			Model 2			Model 3		
	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value
Luck	0.069	0.028	0.013	-	-	-	-	-	-
Badluck	-	-	-	-0.023	0.015	0.113	-	-	-
BadluckHalf	-	-	-	-	-	-	-0.191	0.059	0.001
LuckHalf	-	-	-	-	-	-	0.017	0.034	0.624
Skill	0.004	0.015	0.763	0.003	0.015	0.854	0.004	0.015	0.766
Size	0.569	0.025	0.000	0.569	0.025	0.000	0.568	0.025	0.000
ROA	0.922	0.073	0.000	0.925	0.073	0.000	0.914	0.073	0.000
Tobin's Q	0.089	0.008	0.000	0.091	0.008	0.000	0.089	0.008	0.000
CashHolding	0.726	0.086	0.000	0.727	0.086	0.000	0.726	0.086	0.000
DebtRatio	-1.107	0.079	0.000	-1.108	0.079	0.000	-1.108	0.079	0.000
FirmAge	0.208	0.071	0.003	0.207	0.071	0.004	0.204	0.071	0.004
Tenure	0.023	0.008	0.008	0.023	0.008	0.007	0.023	0.008	0.008
CEOAge	0.009	0.014	0.531	0.009	0.014	0.535	0.009	0.014	0.546
Duality	0.008	0.023	0.746	0.007	0.023	0.752	0.007	0.023	0.758
TotalPay	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OptionPay	-0.057	0.027	0.035	-0.059	0.027	0.030	-0.057	0.027	0.035
EquityOwn	-0.635	0.255	0.013	-0.634	0.255	0.013	-0.637	0.255	0.013
Constant	-0.688	0.838	0.412	-0.671	0.839	0.424	-0.641	0.840	0.445
Firm-CEO FE	Yes			Yes			Yes		
Firm FE	No			No			No		
Year FE	Yes			Yes			Yes		
Observations	24,153			24,153			24,153		
R-Squared	0.888			0.888			0.888		

Notes: Results are for two-tailed tests. Year and Firm-CEO dummies are included in all regressions. Standard errors are clustered at the firm level.

APPENDIX II

Table A2: Robustness to Luck Measurement – Interaction Effects

Dependent Variable: Strategic Risk-Taking												
	Model 1			Model 2			Model 3			Model 4		
	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value
Badluck	0.001	0.018	0.962	-0.016	0.015	0.286	0.009	0.021	0.675	-0.046	0.020	0.020
AdverseExp	0.068	0.042	0.111	-	-	-	-	-	-	-	-	-
Badluck x AdverseExp	-0.057	0.026	0.031	-	-	-	-	-	-	-	-	-
ExpFinCon	-	-	-	-0.214	0.066	0.001	-	-	-	-	-	-
Badluck x ExpFinCon	-	-	-	-0.044	0.031	0.155	-	-	-	-	-	-
BadluckExp	-	-	-	-	-	-	0.016	0.024	0.498	-	-	-
Badluck x BadluckExp	-	-	-	-	-	-	-0.063	0.023	0.007	-	-	-
BadluckNum	-	-	-	-	-	-	-	-	-	-0.075	0.018	0.000
Badluck x BadluckNum	-	-	-	-	-	-	-	-	-	-0.019	0.009	0.025
Skill	0.003	0.015	0.845	0.005	0.015	0.745	0.003	0.015	0.844	0.007	0.015	0.612
Size	0.568	0.025	0.000	0.562	0.025	0.000	0.569	0.025	0.000	0.557	0.025	0.000
ROA	0.925	0.073	0.000	0.930	0.073	0.000	0.922	0.073	0.000	0.913	0.073	0.000
Tobin's Q	0.091	0.008	0.000	0.090	0.008	0.000	0.091	0.008	0.000	0.086	0.008	0.000
CashHolding	0.733	0.086	0.000	0.730	0.086	0.000	0.728	0.086	0.000	0.731	0.087	0.000
DebtRatio	-1.107	0.079	0.000	-1.097	0.078	0.000	-1.108	0.079	0.000	-1.099	0.078	0.000
FirmAge	0.201	0.071	0.005	0.227	0.071	0.001	0.207	0.071	0.004	0.192	0.072	0.007
Tenure	0.022	0.008	0.010	0.022	0.008	0.006	0.023	0.008	0.008	0.026	0.009	0.002
CEOAge	0.009	0.014	0.508	0.007	0.014	0.604	0.009	0.014	0.532	0.009	0.014	0.509
Duality	0.004	0.023	0.849	0.009	0.023	0.712	0.007	0.023	0.773	0.008	0.024	0.721
TotalPay	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OptionPay	-0.058	0.027	0.033	-0.062	0.027	0.022	-0.059	0.027	0.030	-0.062	0.027	0.021
EquityOwn	-0.628	0.254	0.014	-0.662	0.253	0.009	-0.637	0.255	0.013	-0.637	0.257	0.013
Constant	-0.699	0.839	0.405	-0.561	0.823	0.495	-0.681	0.838	0.417	-0.506	0.832	0.543
Firm-CEO FE	Yes			Yes			Yes			Yes		
Firm FE	No			No			No			No		
Year FE	Yes			Yes			Yes			Yes		
Observations	24,153			24,153			24,153			24,153		
R-Squared	0.888			0.888			0.888			0.888		

Notes: Results are for two-tailed tests. Year and Firm-CEO dummies are included in all regressions. Standard errors are clustered at the firm level.

APPENDIX III

Table A3: Robustness to Firm FE – Main Results

Dependent Variable: Strategic Risk-Taking									
	Model 1			Model 2			Model 3		
	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value
Luck	0.095	0.024	0.000	-	-	-	-	-	-
Badluck	-	-	-	-0.049	0.013	0.000	-	-	-
BadluckHalf	-	-	-	-	-	-	-0.243	0.046	0.000
LuckHalf	-	-	-	-	-	-	0.014	0.030	0.637
Skill	0.037	0.015	0.018	0.036	0.015	0.022	0.036	0.015	0.019
Size	0.728	0.016	0.000	0.727	0.016	0.000	0.727	0.016	0.000
ROA	0.958	0.085	0.000	0.961	0.085	0.000	0.932	0.085	0.000
Tobin's Q	0.084	0.007	0.000	0.086	0.007	0.000	0.085	0.007	0.000
CashHolding	0.291	0.079	0.000	0.293	0.079	0.000	0.291	0.079	0.000
DebtRatio	-0.876	0.072	0.000	-0.878	0.072	0.000	-0.875	0.071	0.000
FirmAge	0.036	0.047	0.450	0.032	0.047	0.491	0.030	0.047	0.520
Tenure	0.001	0.002	0.497	0.001	0.002	0.487	0.001	0.002	0.487
CEOAge	-0.002	0.002	0.287	-0.002	0.002	0.267	-0.002	0.002	0.270
Duality	0.007	0.019	0.724	0.006	0.019	0.732	0.007	0.019	0.725
TotalPay	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.001
OptionPay	-0.021	0.025	0.394	-0.021	0.025	0.414	-0.020	0.025	0.418
EquityOwn	-0.558	0.209	0.007	-0.558	0.208	0.007	-0.558	0.209	0.008
Constant	-0.503	0.189	0.008	-0.464	0.190	0.015	-0.455	0.190	0.017
Firm-CEO FE	No			No			No		
Firm FE	Yes			Yes			Yes		
Year FE	Yes			Yes			Yes		
Observations	24,153			24,153			24,153		
R-Squared	0.861			0.861			0.861		

Notes: Results are for two-tailed tests. Standard errors are clustered at the firm level.

APPENDIX IV

Table A4: Robustness to Firm FE – Interaction Effects

Dependent Variable: Strategic Risk-Taking												
	Model 1			Model 2			Model 3			Model 4		
	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value	Beta	SE	p value
Badluck	-0.038	0.017	0.026	-0.038	0.014	0.006	-0.030	0.018	0.105	-0.049	0.016	0.003
AdverseExp	0.020	0.026	0.437	-	-	-	-	-	-	-	-	-
Badluck x AdverseExp	-0.028	0.024	0.244	-	-	-	-	-	-	-	-	-
ExpFinCon	-	-	-	-0.125	0.039	0.001	-	-	-	-	-	-
Badluck x ExpFinCon	-	-	-	-0.069	0.030	0.023	-	-	-	-	-	-
BadluckExp	-	-	-	-	-	-	-0.010	0.018	0.565	-	-	-
Badluck x BadluckExp	-	-	-	-	-	-	-0.046	0.022	0.034	-	-	-
BadluckNum	-	-	-	-	-	-	-	-	-	-0.039	0.010	0.000
Badluck x BadluckNum	-	-	-	-	-	-	-	-	-	-0.016	0.008	0.044
Skill	0.035	0.015	0.022	0.037	0.015	0.016	0.036	0.015	0.020	0.038	0.015	0.014
Size	0.727	0.016	0.000	0.720	0.017	0.000	0.727	0.016	0.000	0.725	0.016	0.000
ROA	0.960	0.085	0.000	0.959	0.085	0.000	0.955	0.085	0.000	0.949	0.085	0.000
Tobin's Q	0.086	0.007	0.000	0.085	0.007	0.000	0.086	0.007	0.000	0.084	0.007	0.000
CashHolding	0.295	0.079	0.000	0.297	0.078	0.000	0.292	0.079	0.000	0.288	0.079	0.000
DebtRatio	-0.877	0.072	0.000	-0.864	0.072	0.000	-0.878	0.072	0.000	-0.883	0.072	0.000
FirmAge	0.031	0.047	0.507	0.039	0.047	0.409	0.038	0.047	0.426	0.045	0.047	0.338
Tenure	0.001	0.002	0.652	0.002	0.002	0.414	0.002	0.002	0.321	0.006	0.002	0.014
CEOAge	-0.002	0.002	0.253	-0.002	0.002	0.361	-0.002	0.002	0.296	-0.001	0.002	0.556
Duality	0.006	0.019	0.757	0.008	0.019	0.673	0.008	0.019	0.667	0.010	0.019	0.602
TotalPay	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001
OptionPay	-0.020	0.025	0.422	-0.023	0.025	0.367	-0.021	0.025	0.404	-0.020	0.025	0.434
EquityOwn	-0.550	0.208	0.008	-0.570	0.208	0.006	-0.567	0.209	0.007	-0.609	0.208	0.003
Constant	-0.460	0.191	0.016	-0.442	0.190	0.020	-0.485	0.190	0.011	-0.523	0.190	0.006
Firm-CEO FE	No			No			No			No		
Firm FE	Yes			Yes			Yes			Yes		
Year FE	Yes			Yes			Yes			Yes		
Observations	24,153			24,153			24,153			24,153		
R-Squared	0.861			0.861			0.861			0.861		

Notes: Results are for two-tailed tests. Standard errors are clustered at the firm level.