Does Sports Inspire Managerial Risk-Taking Incentives?

Jean Canil[1*], Sigitas Karpavicius[2], Yudong Liu[3], and Chia-Feng (Jeffrey) Yu[4]

[1,2,3] *Adelaide Business School, University of Adelaide, Australia*

[4] *International Business School Suzhou, Xi'an Jiaotong-Liverpool University, China*

***Correspondence:**

Associate Professor Jean Canil. Adelaide Business School, The University of Adelaide. Adelaide, SA 5005, Australia. Tel: +6183135534. Email: jean.canil@adelaide.edu.au

Emails:

jean.canil@adelaide.edu.au (Jean Canil, PhD and Associate Professor)

sigitas.karpavicius@adelaide.edu.au (Sigitas Karpavicius, PhD and Associate Professor)

yudong.liu@adelaide.edu.au (Yudong Liu, PhD Candidate)

chiafeng.yu@xjtlu.edu.cn (Chia-Feng (Jeffrey) Yu, PhD and Senior Associate Professor)

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Abstract

We investigate the relationship between local professional sports success and executive compensation structures, specifically examining how championship victories influence managerial risk-taking incentives. Employing a stacked difference-in-differences methodology on a comprehensive dataset of S&P 1500 firms from 1992-2018, we document that Big 4 (NFL, NBA, MLB, NHL) championship victories significantly increase the vega—but not the delta—of executive compensation packages at locally-headquartered firms. The magnitude of this effect exhibits significant cross-sectional heterogeneity. The vega sensitivity is particularly pronounced among male executives, those temporally distant from retirement, and executives operating in industries with stronger tournament incentives. At the firm level, the effect is amplified in organizations at earlier stages of their product lifecycle, those with elevated R&D intensity, and within more competitively structured industries. Our empirical investigation reveals two primary transmission mechanisms: (1) enhanced executive confidence following local championship victories, and (2) strengthening of corporate innovation culture. These findings contribute to the behavioral corporate finance literature by identifying a novel exogenous shock that influences executive risk-taking incentives. Moreover, our results extend the growing body of research on the spillover effects of non-economic factors on corporate decision-making and compensation design.

Keywords: Sports Inspiration; Behavioral Agency; Execution Compensation; Risk-Taking Incentives.
JEL Classification: G30; G41; L83; M12

1. Introduction

The influence of sporting events extends far beyond their immediate competitive context, generating significant spillover effects across multiple domains of economic and social behavior. These effects manifest in various forms, from market reactions to shifts in social cohesion, suggesting that sports outcomes serve as powerful catalysts for behavioral change at both individual and institutional levels. This relationship between major sporting victories and executive compensation vega — defined as the change in the dollar value of an executive's wealth in response to a 1% change in the annualized standard deviation of the firm's stock return—reveals fascinating insights into how non-economic events shape corporate governance mechanisms. Drawing on both psychological evidence and financial insights, we propose a novel perspective that bridges the gap between sports outcomes and executive compensation, specifically focusing on this key metric which is primarily driven by the number of stock options in executives' compensation packages for the five most senior paid executives in each firm.

While substantial research has explored the impact of sports outcomes on financial markets, from Edmans et al.'s (2007) documentation of market return declines following soccer losses to Akhigbe et al.'s (2017) patterns of increased local trading activity, their influence on corporate policy decisions remains largely unexplored. Sports victories serve as powerful catalysts that transform the local business environment's risk appetite and performance expectations, creating a cultural momentum that permeates corporate boardrooms and influences compensation structures. The psychological boost from local sports success may amplify executives' willingness to pursue innovative but risky projects, particularly when their compensation structure protects them from downside risk. This mechanism operates beyond traditional financial markets, as evidenced by broader societal responses: Ge et al. (2021) establish a causal link between football matches and criminal activity in São Paulo, while

Depetris-Chauvin et al. (2020) find that national team victories enhance inter-ethnic trust and significantly reduce local violence. In academia, Hirt et al. (1992) found a significant improvement in the academic performance of college students after watching their team win a basketball match. These findings collectively suggest that sports victories not only influence immediate market behavior but also shape sophisticated financial instruments and corporate governance mechanisms, demonstrating how community-level events can have far-reaching implications for institutional decision-making and risk-taking behavior. Our study, therefore, seeks to establish a bridge between these seemingly disparate worlds—how the emotional responses triggered by sports victories can significantly influence executive behavior, particularly in risk-taking.

Our research investigates sports inspiration resulting from major professional sports league championships in the United States[1], specifically the final championships of the National Football League (NFL), National Basketball League (NBA), Major League Baseball (MLB), and National Hockey League (NHL), won by the city for the first time or after a decade-long drought. Using a comprehensive dataset of S&P 1500 firms spanning 1992-2018, and employing a stacked difference-in-differences research design we find that the compensation vega of executives affected by sports inspiration increases by 5.7% after the event.

Our identification strategy classifies firms as "treated" based on geographical proximity, specifically firms headquartered within 100 miles of the championship venue (Dai et al., 2020; Fich, Nguyen, & Petmezas, 2023)[2], and control group consists of the firms locating

[1] The sports market in the United States is the largest in the world and their major sports events, like NFL, are also characterized by intense fan enthusiasm. In addition, according to the 2016 PwC Sports Outlook (https://www.pwc.com/us/en/industry/entertainment-media/publications/assets/pwc-sports-outlook-2016.pdf), the US sports industry is an important revenue generator in the economy, which was worth $63.9 billion in 2015, and this will continue to increase.

[2] We also use alternative cutoffs of 150 miles and 200 miles to differentiate whether the firm is affected by the sports inspiration events, and our results still hold.

in the areas that are never affected by the championship, as determined by the 100 miles boundaries. This approach allows us to isolate the causal effect of sports inspiration on executive compensation structures. Our 5.7% increase in compensation vega remains unchanged when we incorporate different control variables and is robust when we use propensity score matching (PSM). Our tests show that the pre-treatment trends in executive compensation vega are indistinguishable between the treated and control groups, with most of the effect occurring after the sports inspiration event, suggesting a causal effect.

Our analysis reveals heterogeneous effects of sports-induced inspiration on executive compensation structures. While we document an increase in compensation vega, we find a modest negative effect on total executive compensation, predominantly attributable to a reduction in cash-based components. This suggests a shift in compensation structure rather than an overall increase in executive remuneration. Cross-sectional analyses yield several notable findings regarding the differential impact of sports inspiration on compensation vega. The effect is economically and statistically more pronounced for male executives, executives further from retirement age (defined as below 60), and those facing higher industry tournament incentives—consistent with behavioral theories of risk-taking and career concerns. Moreover, the sensitivity of compensation vega to sports inspiration varies systematically with firm characteristics. Specifically, the effect is amplified in firms at earlier stages of their product life cycle, those with higher R&D intensity (measured as R&D expenditure scaled by total assets), and those operating in more competitive industries (using the Herfindahl-Hirschman Index as our measure of industry concentration). These findings suggest that the influence of sports inspiration on executive compensation design is particularly salient in contexts where risk-taking and innovation are crucial for firm success.

To identify the mechanisms through which sports inspiration influences compensation vega, we conduct a series of channel analyses. First, we examine executive confidence as a potential transmission mechanism. Using the holdings of vested but unexercised stock options as a proxy for managerial optimism—following the methodology established in the behavioral finance literature, like Humphery-Jenner et al. (2016)—we document a significant increase in option holdings among treated executives post-sports inspiration events. This finding suggests that local sporting success may enhance executives' confidence in their firms' prospects, consistent with theories of behavioral bias in managerial decision-making. Second, we investigate the cultural transmission channel by examining shifts in corporate innovation culture. Employing a textual analysis-based corporate culture innovation index, we find a statistically and economically significant increase in innovation-oriented corporate culture following sports inspiration events. This cultural transformation appears to complement the observed changes in compensation structure, suggesting that sports inspiration triggers a broader shift in organizational risk-taking attitudes beyond mere adjustments to compensation contracts. These findings collectively support a dual-channel mechanism where both executive-level behavioral changes and firm-level cultural shifts contribute to the observed relationship between sports inspiration and compensation vega.

Our study makes two distinct contributions to the finance literature. First, we extend the literature examining sports outcomes' influence on financial markets beyond traditional asset pricing effects. While prior research (Edmans et al., 2007; Chang et al., 2012; Pantzalis et al., 2014; Akhigbe et al., 2017) has primarily focused on short-term market reactions to sporting events, our analysis reveals their deeper, more enduring impact on corporate governance mechanisms. Specifically, by examining how sports inspiration shapes compensation vega contracts—a crucial mechanism for addressing agency problems (Bertrand

and Mullainathan, 2003)—we document a previously unexplored channel through which non-economic events influence long-term corporate decision-making.

Second, our findings significantly advance the behavioral corporate finance literature, particularly in understanding executive compensation design. While traditional theories emphasize rational optimization in contract design, recent research highlights the importance of behavioral factors in explaining observed compensation patterns. Our work complements theoretical contributions by Edmans and Gabaix (2016) and empirical evidence on behavioral influences in executive compensation, such as loss aversion's role in the stock-option mix (Dittmann, Maug, and Spalt, 2010) and market speculation's impact on short-term incentives (Bolton, Scheinkman, and Xiong, 2006). Our analysis also extends recent empirical work documenting the influence of local amenities and events on executive compensation, including studies on quality of life (Deng and Gao, 2013), metropolitan location (Francis et al., 2016), and proximity to terrorist attacks (Dai et al., 2020). By demonstrating how sports inspiration affects compensation vega, we provide novel evidence of how behavioral responses to non-economic events shape sophisticated financial contracts, contributing to a more nuanced understanding of executive compensation design through a behavioral economics lens.

The rest of this paper is organized as follows. Section 2 reviews relevant literature and develops the hypothesis. Section 3 describes the data and variable measurements. Section 4 describes the empirical design, including the classification of treatment groups and control groups and the stacked DID model. Section 5 presents the results of the baseline analysis, robustness, a series of subsample analyses, and potential mechanism analysis. Section 6 concludes.

2. Literature Review and Hypothesis Development

2.1 The Impact of Sports Event Outcomes

The following review explores a plethora of studies investigating how individuals emotionally respond to sports results and how these responses affect behavior, including mood, self-esteem, and economic decisions that extend beyond the confines of sports arenas.

2.1.1 Emotional Responses to Sports Event Outcomes

A substantial body of research consistently demonstrates the profound emotional impact of sports events on individuals (Schwarz et al., 1987; Hirt et al., 1992; Schweitzer et al., 1992; Wann et al., 1994; Jones et al., 2012; Ge et al., 2021; Cardazzi et al., 2024). Favorable outcomes, such as victories or strong performances by one's favorite team, tend to evoke positive emotions and elevate the mood of sports enthusiasts. Conversely, disappointing results are invariably associated with negative emotions. The seminal work of Wann et al. (1994) emphasizes that these emotional reactions often extend well beyond the immediate aftermath of the sporting event, significantly impacting individuals' self-esteem and overall life satisfaction.

Moreover, Hirt et al. (1992) reveal a noteworthy improvement in the academic performance of college students after witnessing their team win a basketball match, highlighting the spill-over effects of sports outcomes into non-sport-related domains. Similarly, Schwarz et al. (1987) document that Germany's World Cup match outcome in 1982 induced notable changes in subjects' well-being and perceptions of national issues. In a parallel vein, Schweitzer et al. (1992) demonstrate that students supporting the winning team in a televised American football game exhibited lower evaluations of the probability of a 1990 war in Iraq and its potential casualties than fans of the losing team.

Jones et al. (2012), analyzing survey data from English and Spanish soccer fans during the 2010 World Cup, found enduring positive emotional experiences associated with group success, which persisted longer than the negative emotional experiences linked to group failure.

Similarly, Ge et al. (2021) present evidence of a notable increase in thefts and robberies in San Paulo, Brazil, following football matches, with upset losses and derby games eliciting particularly pronounced effects. Additionally, Cardazzi et al. (2024) establish a compelling correlation between unexpected losses by the local NBA team and an increase in male-on-female in-home violence. Recent research by Depetris-Chauvin, Durante, and Campante (2020) examines the role of shared collective experiences in building national identity by studying the impact of national football teams' victories in sub-Saharan Africa. Their findings reveal that individuals surveyed in the days after an important victory of their country's national team exhibit a 37 percent lower likelihood of primarily identifying with their ethnic group and a 30 percent increase in trust in other ethnicities compared to those interviewed just before. Crucially, national team achievements also reduce violence, with countries that (barely) qualified for the Africa Cup of Nations experiencing 9 percent fewer civil conflict episodes in the following months than countries that (barely) did not.

2.1.2 Economic Implications of Emotional Responses to Sports Outcomes

The emotional responses elicited by sports events have reverberations in the realm of economic activities, as evidenced by Arkes et al. (1988), who observed an increase in Ohio State lottery ticket sales following the victory of the Ohio State University football team. Ashton et al. (2003), Edmans et al. (2007), Kaplanski and Levy (2010), Chang et al. (2012), and Pantzalis et al. (2014) assert that sports results can significantly impact stock returns. Furthermore, Akhigbe et al. (2017) have investigated the influence of predictable sports sentiment on local trading activities and found statistically significant increased trading before games. Using household-level data, Kaplanski et al. (2015) provide compelling evidence that sports results and general feelings substantially affect stock market return expectations, with a

strong positive correlation between the success of an individual's favorite sports teams and their expectations.

2.2 Exploring the Structure of Executive Compensation from a Behavioral Perspective

Executive compensation has been a focal point of scholarly inquiry, particularly in addressing the principal-agent problem. Much of the literature underscores the importance of aligning executive incentives with firm performance by sensitizing their wealth to company achievements (Jensen and Murphy, 1990). However, the optimal configuration of these incentives also hinges on variables such as executive exposure to firm risk through convex payoffs and sensitivity to stock volatility, often represented as compensation vega (Guay, 1999; Core and Guay, 2002; Coles et al., 2006). Despite prior endeavors, considerable variance in executive incentives, especially compensation vega, remains unaccounted for (Coles and Li, 2020; Edmans and Gabaix, 2017).

2.2.1 Behavioral Considerations in Executive Compensation

Incorporating behavioral considerations into executive compensation models has emerged as a pivotal avenue for comprehending incentive structures (Wiseman and Gomez-Mejia, 1988; Edmans and Gabaix, 2016, 2017). While conventional theories often presuppose rational decision-making, behavioral theories furnish complementary insights by acknowledging the influence of cognitive biases and non-standard preferences on executive conduct.

Option-based compensation has been posited as an optimal response to address behavioral biases exhibited by executives or to accommodate non-standard risk preferences. Bolton et al. (2006) illustrate that contract accentuating short-term performance can represent a rational adaptation to speculative markets. Dittmann et al. (2010) substantiate that realistic

CEO loss aversion levels can rationalize the use of options since they provide a safeguard against downside risk. Chaigneau et al. (2017) demonstrate that options can be optimal when executives display a degree of prudence, implying a preference for positive skewness, and convex contracts enhance the skewness of the pay distribution.

From an empirical standpoint, behavioral biases stemming from nonmonetary factors exert a substantial influence on executive compensation. Deng and Gao (2013) find that companies in areas characterized by a low quality of life, as indicated by factors like crime rate or cost of living, tend to offer higher compensation to their CEOs than firms located in more livable regions. Similarly, Francis et al. (2016) establish that CEOs in metropolitan areas, known for their abundance of consumption amenities and employment opportunities, typically receive higher compensation than their rural counterparts. Additionally, Dai et al. (2020) discern that CEOs employed at firms located near terrorist attacks tend to earn higher average pay relative to CEOs at firms located far from such incidents.

Individual traits significantly shape executives' risk preferences, and a nuanced understanding of these biases is imperative in crafting and tailoring incentive compensation packages. For example, Gervais, Heaton, and Odean (2011) furnish theoretical evidence suggesting that mildly overconfident executives necessitate fewer convex contracts, implying fewer options. Conversely, overconfidence results in an altered outcome, with firms opting to grant more options to capitalize on the executive's overestimation of outcomes. Humphery-Jenner et al. (2016) extend this line of inquiry by measuring overconfidence based on the extent to which CEOs retain deep in-the-money options after they become exercisable. Their findings reveal that more overconfident executives receive substantial incentive compensation through options and stocks.

2.2.2 Importance of Understanding Incentive Compensation Structure

Comprehending the dynamics underpinning incentive compensation structures holds critical significance for two primary reasons. Firstly, agency problems related to risk have a pronounced impact on corporate policy decisions and overall firm value (Gormley and Matsa, 2011, 2016; Low, 2009; May, 1995). Consequently, grasping how compensation design addresses these issues is paramount from the shareholders' standpoint. Secondly, a dearth of knowledge exists concerning how firms establish and fine-tune risk-related incentive structures provided to executives through options in light of the firm's risk environment (Gormley et al., 2013). Addressing this knowledge gap is indispensable for understanding executive compensation and its implications for firm behavior and performance.

The analysis of CEO compensation from a behavioral perspective furnishes invaluable insights into incentive structures and their repercussions on firm conduct. By incorporating behavioral considerations, researchers gain a more comprehensive understanding of the intricate nuances inherent in executive compensation (Gervais, Heaton and Odean (2011), Humphery-Jenner et al. (2016)). Moreover, comprehending how firms navigate risk-related agency challenges through incentive design is pivotal in shaping corporate policy decisions and augmenting firm value. This avenue of research offers a substantial potential for illuminating the complexities of executive compensation and its pivotal role in shaping organizational behavior.

2.3 Sports Inspiration and Executive Compensation

In this study, we investigate the influence of sports inspiration on executive compensation, specifically compensation vega. We define sports inspiration as exogenous shocks stemming from championship victories in major professional sports leagues in the United States, including the NBA, NFL, NHL, and MLB, occurring at the city level over a ten-year period. Distinguishing itself from mere sports sentiments utilized in prior research, sports

inspiration events are characterized by their precision, specificity, and the enduring impact they impart upon individuals.

While previous studies, such as Edmans et al. (2007), have delved into the repercussions of sports sentiments on stock returns, a conspicuous gap remains in the micro-level evidence regarding how executives respond to sports outcomes. Within this study, we concentrate on a specific facet of executive compensation, specifically compensation vega, a metric that gauges compensation convexity or managerial risk-taking incentives. Compensation vega signifies the change in the dollar value of an executive's wealth in response to a 1% alteration in the annualized standard deviation of their firm's stock return, drawing from the methodology articulated in Core and Guay (2002).

Graham, Harvey, and Puri (2013) have used comprehensive survey data to scrutinize the risk-taking propensities of CEOs and provide empirical evidence between managerial attitudes and corporate actions. Additionally, they establish a tangible empirical link between risk aversion and compensation structure, elucidating that risk-tolerant executives are more inclined to be remunerated via stocks, options, and performance-based bonuses, while less predisposed to receive salary-based compensation. Parallel investigations have further reinforced this perspective, with Grund and Sliwka (2010), Bellemare and Shearer (2010), and Dohmen and Falk (2011) presenting evidence of a positive association between risk tolerance and incentive-based compensation. Cain and McKeon (2016) find that CEOs who are more risk-taking measuring with the pilot certificate has higher compensation vega.

Building upon psychological insights and behavioral theories, we posit the following hypothesis:

Hypothesis 1: *Sports inspiration increases managerial risk-taking incentives.*

In simpler terms, we anticipate that exposure to sports inspiration events, such as winning championships following prolonged droughts, positively influences executives' risk-

taking attitudes. This, in turn, amplifies their managerial risk-taking incentives, a phenomenon discernible through higher compensation vega values embedded within their compensation agreements. Our hypothesis is firmly rooted in the belief that sports inspiration events can engender a favorable transformation in executives' public life attitudes, rendering them more disposed to undertake calculated risks and strive for enhanced rewards via their compensation packages.

3. Data and Variables

To investigate the influence of sports inspiration on executives' compensation vega, we collect the executives' compensation data available for all of a firm's executives from the S&P ExecuComp data set[3]. Financial data are obtained from Compustat. The sample consists of all U.S. listed firms headquartered within the United States. The merged ExcuComp and CRSP data set comprises a stacked unbalanced panel of 118,474 executive-year observations from 1992 to 2018.

3.1 The Measurement of Sports Inspiration

To empirically identify sports inspiration events, we construct a comprehensive dataset of championships across the four major U.S. professional sports leagues (NFL, NBA, MLB, and NHL). We define sports inspiration events as either (1) a city's inaugural championship victory in any of these leagues or (2) a championship victory following a minimum ten-year championship drought. This definition captures instances of exceptional achievement likely to generate significant local psychological impact and economic spillovers. For instance, the 1999 NBA championship victory by the San Antonio Spurs represents the city's first major

[3] Most firms report compensation for up to 5 executives, although some firms may provide information for a larger number of executives. For our project, we focus on top five executives for each firm.

professional sports championship, while the Boston Red Sox's 2004 MLB championship ended an eighteen-year citywide championship drought following the Boston Celtics' 1986 NBA title.[4]

During our sample period, we identify multiple sports inspiration events, beginning with the Dallas Cowboys' 1993 NFL championship (following a fifteen-year drought) and concluding with the Houston Astros' 2017 MLB championship (ending a twenty-two-year citywide championship drought). These events provide quasi-experimental variation in local sporting success, allowing us to identify the causal effect of sports inspiration on executive compensation structures. Detailed championship data and event classifications are provided in Appendix A.

3. 2 The Measurement of the Convexity of Compensation Contracts

We use the portfolio vega of an executive's compensation package to measure convexity. We follow prior literature (see Guay (1999), Core and Guay (2002), and Coles, Daniel, and Naveen (2006)) and calculate compensation vega as the change in the dollar value of an executive's wealth in response to a 1% change in the annualized standard deviation of the 'executive's firm's stock return. This variable is based on the methodology in Core and Guay (2002). Our regression models use the natural logarithm of 1 plus compensation vega (*ln(1+Vega)*) as the proxy for an executive's risk-taking incentives[5].

3.3 The Measurement of Firm Characteristics

[4] Sports championships generate substantial local economic impacts. The U.S. Chamber of Commerce reports that in Cleveland (2017), establishments within one mile of team stadiums experienced 13% growth in bars and restaurants and 23.5% increase in total employment. Additionally, Coates et al. (2002) document that Super Bowl championship cities experience approximately $140 higher real per capita personal income. For detailed documentation, see: https://www.uschamber.com/travel/national-sports-championships-provide-big-wins-local-economies-businesses

[5] The data are provided by Lalitha Naveen at https://sites.temple.edu/lnaveen/data/

We control for several firm characteristics that may influence executives' compensation vega and sports inspiration. As firms become larger, they may provide more option compensation to attract or retain talented employees (Baker and Hall (2004)). Thus, we control for size (*Asset*), measured by the natural logarithm of the book value of assets. Changes to optimal corporate investment or research and development due to better trade-secret protection can also influence compensation vega (Cheng 2014). Thus, we also control for firms' investments in R&D (*R&D*) and capital expenditures (*Capx*). A firm's level of risk and its investment opportunities may also influence optimal risk-taking incentives (Baber et al., (1996); Hossain et al., 2023; Dunbar et al., 2020). Thus, we control for a firm's cash-flow volatility (*Cash_flow_V*) and its market-to-book ratio (*MB*). We also control for book leverage by total assets (*Leverage*). Compensation delta also affects the choice to undertake risky investments (Dittmann, Yu and Zhang (2017)). We use the natural logarithm of 1 plus Delta (*ln(1+Delta)*) as an additional control variable. Table 1 reports the summary statistics for our sample[6]. For the key variable in this paper, *ln(1+Vega)* has a mean(median) equal to 2.535 (2.627). More details on variable constructions, definitions, and data sources are provided in Appendix B.

[Insert Table 1 here]

4. Empirical Methodology

4.1 Defining treatment and control groups

We assess the influence of sports inspiration on firms by determining their proximity to a sports arena, classifying a firm as "treated" if the sports inspiration event occurs within 100 miles of the firm's headquarters[7]. To calculate this distance, we utilize the latitude and

[6] All continuous variables used in our regression models are winsorized at 1% and 99 %.
[7] We also use alternative cutoffs of 150 miles and 200 miles to differentiate whether the firm is affected by the sports inspiration events, and our results still hold.

longitude coordinates of both the sports arena and the firm's headquarters. When the distance between them is less than 100 miles, we categorize the firm as treated. Forty-two cities in the United States have achieved championship victories in one or more of the big four professional sports leagues. We then investigate changes in compensation vega during a seven-year period encompassing the event year, three years before, and three years after the event. Furthermore, for each sports inspiration event, our control group consists of firms located in cities that have not achieved championships in the big four professional sports leagues in the United States. Following the classification of treated firms, as previously discussed, we create a 100-mile radius circle with the sports arena as its centre. Firms headquartered within this circle are labelled as treated, while those outside the circle serve as control firms. These control firms have not been exposed to a sports inspiration event. This clear distinction between treated and control firms enables us to capture the treatment effect of sports inspiration using the stacked Difference-in-Differences (DID) model more accurately.

4.2 Empirical Model

To investigate how sports inspiration affects executive compensation vega, we perform the following stacked DID model[8]:

$$Y_{i,t+1,j,h} = \alpha_{i,h,j} + \gamma_{t,j} + \beta_1 Treat_{i,h,j} * Post_{t,j} + \Sigma Control_{h,t} + \epsilon_{i,t,j,h} \quad (1)$$

The dependent variable $Y_{i,t+1,j,h}$ represents the compensation vega, *ln (1 + vega)* for executive i, in firm h, in year t for event j. *Treat* is an indicator variable that equals one (zero) for the treatment (control) group. To conduct a Difference-in-Difference analysis, we also

[8] Traditional staggered DID analysis may generate biased estimates because of negative weights in the presence of heterogeneous treatments effects, which can be alleviated by the stacked DID identification strategy (e.g., Cengiz, Dube, Lindner, and Zipperer, 2019; Baker, Larcker, and Wang, 2022). So, we use a stacked DID model to investigate the sports inspiration on executives' compensation, and treatment and control firms are defined event by event.

define an indicator variable, *Post*, which equals one for years after the sports inspiration event.α_{ihj} and γ_{tj} are the spell (unique firm-executive pairs)- and year-fixed effects for each event j, respectively, which can account for time-specific shocks and time-invariant unobservable characteristics that may affect the relationship between sports inspiration and executives' compensation vega. $\epsilon_{i,t,j,h}$ is the residual of the model. All the t-statistics are on an adjusted basis, two-way clustered by event*firm and event*year (White 1980; Petersen 2008; Cengiz, Dube, Lindner, and Zipperer, 2019).

Our key interest is the coefficient estimation β_1, which captures the effects of the influence of sports inspiration on executives' compensation vega. If sports inspiration promotes executives' compensation vega, we should observe positive and significant coefficient estimates on $Treat_{i,h,j} * Post_{t,j}$.

5. Empirical Results

5.1 Baseline and Parallel Trend

We use the stacked DID model to investigate the influence of sports inspiration on executives' compensation vega. In Table 2, we examine the effect of sports inspiration on compensation vega using the regression model (1). Column (1) shows the estimation of the impact of sports inspiration on compensation vega with only fixed effects. The coefficient of *Treat*Post* is positive and significant at the 5% level. In Column (2) and Column (3), we include control variables in our regression analysis. The coefficient of *Treat*Post* is positive and significant at a 1% level as well. In terms of economic magnitude[9], Column (3) suggests that compensation vega in the treatment group increases by 1.3% after the event, compared

[9] As for the calculation economic significance of dummy variable *Treat*Post*, we follow Mitton (2024) using the formula $E_{\frac{1}{\bar{y}}} = \left| \frac{b}{\bar{y}} \right|$. b represents the coefficient of the *Treat*Post* and $\bar{y}$ represents the mean value of the dependent variable, here is the mean value of *ln(1+Vega)*.

with the control group. Taken together, our results suggest that sports inspiration significantly enhances compensation vega. In Column (4), we also show that the effect of sports inspiration on compensation delta is insignificant.

[Insert Table 2 here]

To ensure the validity of the parallel trend assumption for our DID analysis, we examine the dynamic effect of sports inspiration on executives' compensation vega in Column (1) of Table 3. We replace *Post* in model (1) with six time-dummies, including $Before^2$, $Before^1$, $After^0$, $After^1$, $After^2$ and $After^3$. $Before^2$ and $Before^1$ equal one for observations in the second and first years before the sports inspiration event. $After^0$ equals one for observations in the event year of sports inspiration. $After^1$, $After^2$ and $After^3$ equal one for observations in the first, second and third years after the sports inspiration event, respectively. We include the interaction terms between *Treat* and these six dummy variables on our baseline regression along with our control variables. In Column (1), the coefficients for $Treat*Before^2$ and $Treat*Before^1$ are distinguishable from zero, indicating no pre-existing trends in executives' compensation vega before the sports inspiration. In contrast, the coefficients of $Treat*After^1$, $Treat*After^2$, and $Treat*After^3$ are significantly positive at 10%, 1%, and 5% level respectively. The pattern in our dynamic analysis demonstrates that the parallel trend assumption holds. To visualize the parallel treads, we plot the coefficient estimates obtained from Table 3 onto Figure 1.

[Insert Table 3 here]

[Insert Figure 1 here]

In addition, we also estimate the influence of sports inspiration on executives' compensation and decompose the total pay into three main parts: cash, option value, and stock value. Column (1) in Table 4 shows the estimation of the effect of sports inspiration on executives' total pay. The coefficient of *Treat*Post* is negative and significant at the 10% level. The decrease in total pay is due to a reduction in the cash component of total compensation, as shown in Column (4). Columns (2) and (3) show the estimation of the effects of sports inspiration on the options and stock component in executives' total pay and the coefficients of *Treat*Post* are insignificant.

[Insert Table 4 here]

5.2 Propensity Score Matching

To alleviate the concern that our findings are driven by pre-event differences between treatment and control groups, we conduct a propensity score matching and then re-run our regression model (1) on the matched sample. Specifically, for each treatment firm in an event, we select a matched control firm based on a propensity score after a logit model is estimated. We conduct the matching process 31 times for 31 events used in our previous regression analysis. In the logit model, the dependent variable is the *Treat* dummy, and the matching variables include all firm-level control variables we use in the baseline regression model. Our logit model also controls for industry-fixed effects. We define industries based on the classification of Fama-French 48 industries. To maintain the statistical independence of our tests, we implement a nearest neighbor matching (NNM) algorithm without replacement and match firms with similar propensity scores. The NNM algorithm uses the distance between covariate patterns to define the "closest" neighbor.

Panel A of Table 5 compares the firm characteristics between treatment and control firms before and after matching. Before matching, treatment firms are significantly different from control firms. However, none of the differences is significant at the conventional level for the matched sample after matching, implying that the matched treatment and control firms are comparable after our propensity score matching procedure. Panel B of Table 5 shows the regression results with the propensity score matched sample. The coefficients of *Treat*Post* are 0.072 (standard errors = 0.034) in Column (1), which is positive and significant at 5% level. Thus, we still find significant evidence that sports inspiration affects treated executives' compensation vega when using the matched sample.

[Insert Table 5 here]

5.3 Subsample Analysis

In this section, we will do a series of subsample analyses to explore the heterogeneous effects of sports inspiration on treated executives' compensation vega.

5.3.1 Characteristics of executives

Based on executive characteristics, we conduct a series of subsample analyses, including title (CEO and non-CEO senior executives), gender (male and female), and age (near retirement or not).

As top management teams include CEOs and other non-CEO senior executives, we divide the sample into two subsamples based on the executive's position. Columns (2) and (4) in Table 6 show the results of the influence of sports inspiration on CEO and non-CEO executives' compensation vega respectively. The coefficients of *Treat*Post* in Column (2) and Column (4) are 0.056 (standard errors = 0.031) and 0.056 (standard errors = 0.026), which are

significant at 10% level and 5% level respectively. Sports inspiration affects not only CEOs but also other non-CEO senior executives.

[Insert Table 6 here]

Following Charness and Gneezy (2012) and Barber and Odean (2001), who show that men are more risk-taking than women, in Table 7, we explore the different influences of sports inspiration on compensation vega between male and female executives. We divided our sample into two samples based on the executives' gender (including all executives). Columns (2) and (4) in Table 7 show the results of the influence of sports inspiration on the compensation vega of male executives and female executives respectively. The coefficient of *Treat*Post* in Column (2) is 0.057 (standard errors = 0.027, significant at the 5% level, two-tailed). However, the coefficient of *Treat*Post* in Column (4) is not significant at a 10% level, which means that the sports inspiration has a significant effect on the male executive's compensation vega but not on the female executive's compensation vega.

[Insert Table 7 here]

Prendergast and Stole (1996) and Serfling (2014) state that the benefits from incremental risk-taking are lower for older executives. Consequently, boards may adjust compensation vega differently for younger versus older executives. In Table 8, we examine the effect of sports inspiration on the compensation vega of executives of different ages. To capture the effect of age, we categorize executives based on their proximity to retirement, setting the threshold at 61 years or older for those considered close to retirement. Columns (2) and (4) in Table 8 show the results of the influence of sports inspiration on the compensation vega of not

near retirement age executives and near retirement age executives respectively. The coefficient of *Treat*Post* in Column (2) is 0.076 (standard errors = 0.029, significant at the 1% level, two-tailed). However, the coefficient of *Treat*Post* in Column (4) is not significant at a 10% level, which means that the sports inspiration has a significant effect on the compensation vega of not near retirement age executives but not on that of near retirement age executives.

[Insert Table 8 here]

5.3.2 *Characteristics of firms or industries*

Based on firm and industry characteristics, we conduct a series of subsample analyses, including firms in the early versus late stages of the product life cycle, high versus low R&D firms, high versus low industry tournament incentives, and high versus low competition industries.

Hoberg and Maksimovic (2022) reveal the relationship between firm investment policies and product life cycles by developing a novel 10-K text-based model. In this section, we explore the influence of sports inspiration on the compensation vega of executives employed by firms located in different product cycles, using data from Hoberg and Maksimovic (2022). To capture the effect of the firms' product life cycles, we divide our sample into two groups: executives employed by firms in the early stages of the product life cycle and those in the late stages. According to Hoberg and Maksimovic's (2022) definition of the product life cycle, we categorize a firm as being in the early product life cycle if it is in Life 1 and Life 2, and as being in the late product life cycle if it is in Life 3 and Life 4. Columns (2) and (4) in Table 9 show the results of the influence of sports inspiration on the compensation vega of executives employed by firms in the early stages of the product life cycle and those in the late stages respectively. The coefficient of *Treat*Post* in Column (2) is 0.071 (standard errors =

0.035, significant at the 5% level, two-tailed). However, the coefficient of *Treat*Post* in Column (4) is not significant at a 10% level, which means that the sports inspiration has a significant effect on the compensation vega of executives employed by firms in the early stages of the product life cycle but not on those in the late stages.

[Insert Table 9 here]

Next, we turn our attention to R&D. Balkin, Markman, and Gomez-Mejia (2000) point out that financial incentives for top executives in high-technology firms tend to be loosely linked to performance. Thus, we expect the treatment effects of sports inspiration to be stronger in low R&D firms. In Table 10, we explore the varying treatment effects of sports inspiration on the compensation vega of executives in high R&D and low R&D firms, respectively. To define high R&D firms, we use the mean value of R&D expenditure during the event period. We classify firms as high R&D if their mean R&D value is higher than the sample mean. Columns (2) and (4) in Table 10 show the results of the influence of sports inspiration on the compensation vega of executives employed by high R&D firms and those employed by low R&D firms respectively. The coefficient of *Treat*Post* in Column (4) is 0.060 (standard errors = 0.030, significant at the 5% level, two-tailed). However, the coefficient of *Treat*Post* in Column (2) is not significant at a 10% level, which means that the sports inspiration has a significant effect on the compensation vega of executives employed by low R&D firms but not on those employed by high R&D firms.

[Insert Table 10 here]

Islam et al. (2022) demonstrate that executives receive higher compensation when industry tournament incentives are elevated, using staggered negative mobility shocks as exogenous disruptions to these incentives. In Table 11, we examine the effect of sports inspiration on the compensation vega of executives with varying levels of industry tournament incentives. To capture external industry tournament incentives, we identify the firm within each industry-year with the highest median executive pay. We then calculate the gap between an executive's pay and the median executive pay at the leading firm in the industry, using this gap as a measure of industry tournament incentives (ITI). An executive is considered to have high ITI if their ITI is above the sample median. Columns (2) and (4) in Table 11 show the results of the influence of sports inspiration on the compensation vega of executives with higher ITI and lower ITI respectively. The coefficient of *Treat*Post* in Column (2) is 0.092 (standard errors = 0.039, significant at the 5% level, two-tailed). However, the coefficient of *Treat*Post* in Column (4) is not significant at a 10% level, which means that the sports inspiration has a significant effect on the compensation vega of executives with higher ITI but not on those with lower ITI.

[Insert Table 11 here]

In Table 12, we examine the effect of sports inspiration on the compensation vega of executives employed in high-competition and low-competition industries, respectively. Using data from Hoberg and Phillips (2016), we measure industry competition using the Herfindahl–Hirschman Index (HHI). Executives are considered to be employed in a high-competition industry if their firm's HHI is lower than the sample median. Columns (2) and (4) show the results of the influence of sports inspiration on the compensation vega of executives employed in high-competition and low-competition industries, respectively. The coefficient of

*Treat*Post* in Column (4) is 0.109 (standard errors = 0.038, significant at the 1% level, two-tailed). However, the coefficient of *Treat*Post* in Column (2) is not significant at a 10% level, which means that sports inspiration has a significant effect on the compensation vega of executives employed in high-competition industries but not on those in low-competition industries.

[Insert Table 12 here]

5.4 The mechanisms

Our baseline results show that the sports inspiration has a significant positive effect on executives' compensation vega. In this section, we investigate the specific channels through which sports inspiration affects executives' compensation vega.

5.4.1 Sports inspiration and executives' confidence

Cain and McKeon (2016) and Humphery-Jenner et al. (2016) state that more confident executives receive more convex compensation contracts. Malmendier and Tate (2005a, 2005b, 2008), Malmendier, Tate, and Yan (2011), and Otto (2014) show that more confident CEOs exercise options later than less confident CEOs. Following Humphery-Jenner et al. (2016) and Coles, Daniel, and Naveen (2013), we use the number of vested but unexercised options to measure executives' confidence levels. In Table 13, we test whether sports inspiration affects the number of vested but unexercised options held by executives.

We re-estimate the baseline regression model using the number of vested but unexercised options as our dependent variable. The results are presented in Table 13. The coefficient of *Treat*Post* in Column (1) is 0.109 (standard errors = 0.037, significant at the 1%

level, two-tailed), which suggests that the executive confidence gets higher after the sports inspiration event.

[Insert Table 13 here]

5.4.2 Sports inspiration and innovation corporate culture

Li et al. (2021) show that corporate culture is correlated with executive compensation design and find a positive association between firms with a strong culture and compensation vega. Therefore, we use the innovation-focused corporate culture index provided by Li et al. (2021) to test whether sports inspiration influences firms' innovation index for corporate culture.

We re-estimate the baseline regression model using the firms' innovation index of corporate culture as our dependent variable. The results are presented in Table 14. The coefficient of *Treat*Post* in Column (1) is 0.111 (standard errors = 0.055, significant at the 5% level, two-tailed), which suggests that the corporate innovation culture of treated firms gets stronger after the sports inspiration event.

[Insert Table 14 here]

6. Conclusion

This study reveals a positive relationship between sports inspiration and executives' compensation vega. Following sports inspiration, the compensation vega of both CEO and non-CEO senior executives increases significantly. Our results remain robust when using the Propensity Score Matching (PSM) method for robustness testing. We also find that sports inspiration has a more significant effect on male executives, executives not nearing retirement

age, and those with higher industry tournament incentives. Additionally, sports inspiration has a more pronounced impact on executives in firms at the early stages of the product life cycle, high R&D firms, and industries with high competition. In our channel analysis, we find that treated executives hold more vested but unexercised options following sports inspiration. We also observe an increase in the innovation index of corporate culture among treated firms after experiencing sports inspiration. Our study provides new empirical evidence to understand top executives' compensation structure from a behavioral perspective. Furthermore, this research contributes to a more comprehensive understanding of the multifaceted impact of sports on individuals and society at large. When designing executive compensation, boards of directors should consider incorporating external factors that align with the executives' characteristics. As executive pay can influence a firm's value, performance, and behavior, it is essential to account for behavioral factors that might affect the personal characteristics of executives.

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Table 1. Summary Statistics

This table reports the summary statistics. The sample includes observations from 1992 to 2018 for 31 sports events, obtained from U.S. S&P 1500 firms covered by CRSP-Compustat and ExecuComp. Variables definitions are provided in Appendix B.

	N	Mean	SD	p25	Median	p75
Asset	118474	7.501	1.565	6.336	7.419	8.479
RD	118474	.014	0.034	0	0	.006
Capx	118474	.066	0.062	.025	.049	.086
Leverage	118474	.241	0.186	.078	.233	.357
MB	118474	1.811	1.046	1.14	1.46	2.076
Cash_flow_V	118474	.036	0.038	.012	.024	.043
ln(1+ OptioNum_Unex_Exer)	118474	3.772	2.254	2.49	4.27	5.409
ln(1+OptionVal)	118474	3.47	3.126	0	4.496	6.228
ln(1+StockVal)	118474	3.172	3.270	0	3.063	6.332
ln(1+Cash)	118474	6.257	0.655	5.803	6.205	6.658
ln(1+Vega)	118474	2.535	1.720	1.176	2.627	3.825
ln(1+Total_Pay)	118474	7.185	1.014	6.439	7.113	7.867
ln(1+Delta)	118474	4.129	1.624	2.99	4.065	5.169

Table 2. Baseline Result

This table reports the baseline result of the influence of sports inspiration on executives' compensation vega and delta using the stacked DID model. The sample contains 31 sports events from 1992 to 2018. The dependent variable is the natural logarithm of one plus vega, where vega is the change (in thousands of dollars) in the value of the executive's wealth due to a 0.01 increase in the annualized standard deviation of the firm's stock return. Columns (1) to (3) show the results of sports inspiration on executives' compensation vega. Columns (4) shows the results of sports inspiration on executives' compensation delta. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			$ln(1+delta)_{t+1}$
*Treat*Post*	0.064**	0.062**	0.057**	-0.011
	(0.028)	(0.028)	(0.026)	(0.025)
Asset		0.126***	0.010	0.015
		(0.033)	(0.031)	(0.021)
RD		0.265	0.669	-0.929*
		(0.532)	(0.540)	(0.492)
Capx		0.329**	0.170	0.194
		(0.149)	(0.141)	(0.131)
Leverage		-0.004	0.142*	-0.242***
		(0.082)	(0.078)	(0.064)
MB		0.031***	-0.068***	0.141***
		(0.011)	(0.013)	(0.011)
Cash_flow_V		-0.109	-0.200	0.579***
		(0.225)	(0.220)	(0.216)
ln(1+Delta)			0.245***	
			(0.022)	
Constant	2.528***	1.502***	1.544***	3.805***
	(0.003)	(0.247)	(0.239)	(0.166)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	117882	117882	117882	117882
adj. R2	0.843	0.844	0.848	0.900

Table 3. Parallel Trend Test

This table reports the dynamic effect of the influence of sports inspiration on executives' compensation vega. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	(1)
	$ln(1+Vega)_{t+1}$
$Treat*Before^2$	0.005
	(0.021)
$Treat*Before^1$	0.032
	(0.030)
$Treat*After^0$	0.025
	(0.032)
$Treat*After^1$	0.062*
	(0.035)
$Treat*After^2$	0.107***
	(0.039)
$Treat*After^3$	0.123**
	(0.051)
Asset	0.013
	(0.029)
RD	0.675
	(0.497)
Capx	0.197
	(0.131)
Leverage	0.107
	(0.071)
MB	-0.079***
	(0.012)
Cash_flow_V	-0.177
	(0.205)
ln(1+Delta)	0.264***
	(0.019)
Constant	1.535***
	(0.221)
Event_Year_FX	YES
Event_Spell_FX	YES
N	107552
adj. R2	0.851

Table 4. The Composition of Executive Compensation

This table reports the results on the effect of sports inspiration on executives' compensation, including total pay, option value, stock value, and cash. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	(1)	(2)	(3)	(4)
	$ln(1+Total\_Pay)_{t+1}$	$ln(1+OptionVal)_{t+1}$	$ln(1+StockVal)_{t+1}$	$ln(1+Cash)_{t+1}$
*Treat*Post*	-0.021*	-0.106	0.072	-0.017**
	(0.013)	(0.070)	(0.063)	(0.008)
Asset	0.147***	0.321***	0.208***	0.045***
	(0.014)	(0.067)	(0.066)	(0.010)
RD	-0.314	-0.676	-1.647	-0.115
	(0.414)	(1.903)	(1.471)	(0.207)
Capx	-0.073	2.820***	-0.972***	-0.175***
	(0.093)	(0.413)	(0.311)	(0.061)
Leverage	-0.179***	-0.142	-0.974***	0.086***
	(0.040)	(0.212)	(0.177)	(0.029)
MB	0.100***	0.168***	0.060**	0.022***
	(0.008)	(0.028)	(0.024)	(0.005)
Cash_flow_V	-0.090	0.173	-1.601**	-0.350***
	(0.138)	(0.670)	(0.659)	(0.103)
Constant	5.964***	0.628	1.874***	5.890***
	(0.107)	(0.515)	(0.510)	(0.075)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	117882	117882	117882	117882
adj. R2	0.846	0.624	0.720	0.846

Table 5. Propensity Score Matching

This table reports the results from the propensity score matching. Panel A compares the mean values of matching variables for treatment and control groups before and after matching, respectively. Panel B shows the regression results with the PSM method. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

Panel A					
Balance tests (pre-matching)					
	Mean			t-test	
Variable	Control	Treated	Difference	t-value	p-value
Asset	7.507	7.373	0.134	3.037	0.002
RD	0.009	0.035	-0.026	-23.341	0.000
Capx	0.070	0.052	0.018	11.190	0.000
Leverage	0.246	0.219	0.027	5.883	0.000
MB	1.775	2.129	-0.354	-11.220	0.000
Cash_flow_V	0.037	0.049	-0.012	-5.188	0.000
Balance tests (after-matching)					
	Mean			t-test	
Variable	Control	Treated	Difference	t-value	p-value
Asset	7.437	7.399	0.038	0.482	0.630
RD	0.017	0.016	0.001	0.757	0.449
Capx	0.059	0.059	-0.000	-0.139	0.889
Leverage	0.232	0.230	0.001	0.179	0.858
MB	1.899	1.845	0.054	1.108	0.268
Cash_flow_V	0.038	0.037	0.001	0.648	0.517

Panel B	
	(1)
	$ln(1+Vega)_{t+1}$
*Treat*Post*	0.072**
	(0.034)
Asset	0.049
	(0.051)
RD	1.154*
	(0.689)
Capx	0.306
	(0.286)
Leverage	0.226*
	(0.128)

MB	-0.064***
	(0.020)
Cash_flow_V	-0.043
	(0.431)
ln(1+Delta)	0.231***
	(0.030)
Constant	1.381***
	(0.385)
Event_Year_FX	YES
Event_Spell_FX	YES
N	30552
adj. R2	0.849

Table 6. Subsample analysis: CEO and non-CEO senior executives

This table reposts the results of the influence of sports inspiration on compensation vega of CEO and non-CEO senior executives respectively. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	CEO		Non-CEO Senior Executives	
	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			
*Treat*Post*	0.067**	0.056*	0.059**	0.056**
	(0.032)	(0.031)	(0.028)	(0.026)
Asset	0.160***	0.044	0.104***	-0.019
	(0.033)	(0.033)	(0.034)	(0.033)
RD	-0.073	0.396	0.425	0.798
	(0.601)	(0.600)	(0.549)	(0.552)
Capx	0.520***	0.262	0.241	0.126
	(0.176)	(0.163)	(0.149)	(0.143)
Leverage	0.073	0.210**	-0.035	0.123
	(0.087)	(0.086)	(0.090)	(0.085)
MB	0.052***	-0.054***	0.018	-0.081***
	(0.012)	(0.015)	(0.012)	(0.014)
Cash_flow_V	-0.712***	-0.720***	0.226	0.101
	(0.269)	(0.263)	(0.232)	(0.223)
ln(1+Delta)		0.262***		0.243***
		(0.022)		(0.023)
Constant	1.724***	1.443***	1.452***	1.660***
	(0.253)	(0.257)	(0.255)	(0.243)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	37963	37963	79919	79919
adj. R2	0.844	0.848	0.833	0.837

Table 7. Subsample analysis: Male executives and female executives

This table reposts the results of the influence of sports inspiration on compensation vega of male and female executives respectively. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	Male-Executives		Female-Executives	
	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			
*Treat*Post*	0.062**	0.057**	0.062	0.057
	(0.028)	(0.027)	(0.073)	(0.070)
Asset	0.138***	0.020	-0.169*	-0.254***
	(0.032)	(0.031)	(0.095)	(0.094)
RD	0.222	0.587	0.181	2.214
	(0.538)	(0.547)	(2.722)	(2.623)
Capx	0.362**	0.202	-0.448	-0.618
	(0.149)	(0.142)	(0.445)	(0.418)
Leverage	-0.006	0.138*	0.092	0.261
	(0.082)	(0.079)	(0.239)	(0.233)
MB	0.028**	-0.072***	0.114***	0.012
	(0.011)	(0.013)	(0.029)	(0.029)
Cash_flow_V	-0.052	-0.151	-1.174	-1.219*
	(0.229)	(0.224)	(0.768)	(0.730)
ln(1+Delta)		0.244***		0.266***
		(0.022)		(0.036)
Constant	1.451***	1.499***	2.979***	2.859***
	(0.242)	(0.235)	(0.707)	(0.677)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	112027	112027	5855	5855
adj. R2	0.843	0.847	0.832	0.838

Table 8. Subsample analysis: near retirement age executives or not

This table reports the results of the influence of sports inspiration on executives' vega based on the executives' retirement age respictively. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	Not Near Retirement Age		Near Retirement Age	
	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			
*Treat*Post*	0.081***	0.076***	-0.032	-0.032
	(0.030)	(0.029)	(0.061)	(0.062)
Asset	0.111***	-0.009	0.102	0.108
	(0.035)	(0.033)	(0.067)	(0.071)
RD	0.062	0.519	4.035*	4.050*
	(0.593)	(0.604)	(2.189)	(2.190)
Capx	0.292*	0.131	0.159	0.166
	(0.149)	(0.140)	(0.320)	(0.320)
Leverage	-0.012	0.145*	-0.044	-0.052
	(0.087)	(0.082)	(0.200)	(0.199)
MB	0.029**	-0.075***	0.009	0.012
	(0.011)	(0.014)	(0.027)	(0.029)
Cash_flow_V	-0.192	-0.281	0.194	0.202
	(0.240)	(0.233)	(0.221)	(0.222)
ln(1+Delta)		0.257***		-0.011
		(0.024)		(0.023)
Constant	1.654***	1.689***	1.681***	1.685***
	(0.264)	(0.255)	(0.537)	(0.535)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	94326	94326	11159	11159
adj. R2	0.848	0.852	0.846	0.846

Table 9. Subsample analysis: executives in early life cycle firms or not

This table reports the results of the influence of sports inspiration on executives' compensation vega based on early and late life cycle firms respectively. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	Early Life Cycle		Late Life Cycle	
	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			
*Treat*Post*	0.073**	0.071**	0.023	0.026
	(0.037)	(0.035)	(0.078)	(0.076)
Asset	0.098**	0.008	0.221***	0.103
	(0.041)	(0.040)	(0.078)	(0.079)
RD	-0.412	-0.285	0.464	0.801
	(0.604)	(0.646)	(2.070)	(2.086)
Capx	0.318*	0.199	1.511***	1.260***
	(0.164)	(0.153)	(0.320)	(0.307)
Leverage	0.173**	0.314***	-0.906***	-0.726***
	(0.086)	(0.081)	(0.197)	(0.194)
MB	0.007	-0.030***	-0.016	-0.109***
	(0.007)	(0.009)	(0.029)	(0.033)
Cash_flow_V	0.109***	0.092***	0.067	0.135
	(0.019)	(0.017)	(0.957)	(0.929)
ln(1+Delta)		0.204***		0.213***
		(0.024)		(0.044)
Constant	1.763***	1.652***	1.144*	1.302**
	(0.314)	(0.317)	(0.642)	(0.606)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	82467	82467	13929	13929
adj. R2	0.838	0.841	0.886	0.888

Table 10. Subsample analysis: executives in high R&D firms or not

This table reports the results of the influence of sports inspiration on executives' compensation vega based on low and high R&D firms respectively. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	High R&D Firms		Low R&D Firms	
	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			
*Treat*Post*	-0.027	-0.028	0.070**	0.060**
	(0.047)	(0.046)	(0.032)	(0.030)
Asset	0.134***	0.065	0.106***	-0.026
	(0.046)	(0.048)	(0.040)	(0.038)
RD	-0.137	0.015	-2.556	-1.569
	(0.586)	(0.610)	(7.663)	(7.215)
Capx	-0.121	-0.143	0.380**	0.212
	(0.322)	(0.322)	(0.161)	(0.151)
Leverage	-0.083	-0.049	-0.005	0.193*
	(0.107)	(0.107)	(0.104)	(0.099)
MB	0.041***	-0.000	0.015	-0.119***
	(0.010)	(0.015)	(0.016)	(0.019)
Cash_flow_V	0.709**	0.658**	-0.427	-0.520**
	(0.326)	(0.320)	(0.268)	(0.258)
ln(1+Delta)		0.132***		0.274***
		(0.035)		(0.022)
Constant	1.979***	1.985***	1.557***	1.658***
	(0.339)	(0.336)	(0.304)	(0.291)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	24739	24739	93143	93143
adj. R2	0.831	0.832	0.844	0.849

Table 11. Subsample analysis: executives in high industry tournament incentives (ITI) or not

This table reports the results of the influence of sports inspiration on executives' compensation vega based on low and high industry tournament incentives (ITI) respectively. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	High ITI		Low ITI	
	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			
*Treat*Post*	0.089**	0.092**	0.037	0.022
	(0.039)	(0.039)	(0.039)	(0.037)
Asset	0.086*	0.012	0.192***	0.071**
	(0.046)	(0.045)	(0.039)	(0.036)
RD	0.207	0.317	-1.019	-0.887
	(0.405)	(0.416)	(1.360)	(1.400)
Capx	0.661***	0.540***	0.277*	0.159
	(0.184)	(0.173)	(0.161)	(0.152)
Leverage	-0.008	0.083	-0.137	0.112
	(0.103)	(0.100)	(0.098)	(0.091)
MB	0.009	-0.019**	0.034***	-0.047***
	(0.008)	(0.008)	(0.010)	(0.012)
Cash_flow_V	0.408***	0.390***	0.073***	0.051***
	(0.124)	(0.122)	(0.013)	(0.013)
ln(1+Delta)		0.162***		0.266***
		(0.020)		(0.028)
Constant	1.640***	1.590***	1.183***	1.093***
	(0.348)	(0.345)	(0.296)	(0.288)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	52575	52575	59590	59590
adj. R2	0.835	0.837	0.853	0.857

Table 12. Subsample analysis: executives in high market concentration industries or not

This table reports the results of the influence of sports inspiration on executives' compensation vega based on low and high industry concentration respectively. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	High HHI		Low HHI	
	(1)	(2)	(3)	(4)
	Dependent Variable: $ln(1+Vega)_{t+1}$			
*Treat*Post*	0.013	0.007	0.116***	0.109***
	(0.037)	(0.035)	(0.039)	(0.038)
Asset	0.191***	0.092**	0.080*	-0.014
	(0.041)	(0.040)	(0.042)	(0.040)
RD	0.366	0.624	-0.416	-0.344
	(0.421)	(0.429)	(0.713)	(0.752)
Capx	-0.222	-0.332*	0.767***	0.580***
	(0.182)	(0.178)	(0.186)	(0.169)
Leverage	-0.103	0.064	-0.018	0.160
	(0.084)	(0.080)	(0.121)	(0.113)
MB	0.015*	-0.034***	0.012	-0.035***
	(0.009)	(0.011)	(0.010)	(0.011)
Cash_flow_V	0.175***	0.143***	0.083***	0.071***
	(0.033)	(0.026)	(0.020)	(0.018)
ln(1+Delta)		0.217***		0.234***
		(0.024)		(0.024)
Constant	1.262***	1.154***	1.709***	1.558***
	(0.301)	(0.293)	(0.328)	(0.326)
Event_Year_FX	YES	YES	YES	YES
Event_Spell_FX	YES	YES	YES	YES
N	61600	61600	56282	56282
adj. R2	0.841	0.844	0.847	0.851

Table 13. Channel I: Executive confidence

This table shows the result of the influence of sports inspiration on executives' confidence measured by the number of vested but unexercised options. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	(1)
	$ln(1+OptioNum\_Unex\_Exer)_{t+1}$
*Treat*Post*	0.109***
	(0.037)
Asset	-0.155***
	(0.043)
RD	3.154***
	(0.733)
Capx	0.233
	(0.201)
Leverage	0.432***
	(0.120)
MB	-0.254***
	(0.019)
Cash_flow_V	-0.414
	(0.350)
ln(1+Delta)	0.396***
	(0.024)
Constant	3.637***
	(0.315)
Event_Year_FX	YES
Event_Spell_FX	YES
N	117882
adj. R2	0.803

Table 14. Channel II: Corporate innovation culture

This table shows the result of the influence of sports inspiration on corporate innovation culture. Variables definitions are provided in Appendix B. Robust standard errors clustered by event-firm and event-year are in parentheses. All the continuous variables are winsorized at the 1% level. *, **, and *** indicate statistical significance at the 10%, 5%, and1% levels, respectively.

	(1)
	Innovation_corporate_culture$_{t+1}$
*Treat*Post*	0.111**
	(0.055)
Asset	-0.071
	(0.043)
RD	0.804
	(1.240)
Capx	0.187
	(0.306)
Leverage	-0.103
	(0.120)
MB	-0.053**
	(0.022)
Cash_flow_V	0.908***
	(0.326)
Constant	4.561***
	(0.371)
Event_Year_FX	YES
Event_Firm_FX	YES
N	24802
adj. R2	0.762

Appendix B. Variable Definition

Variable	Definition
Capx	Capital expenditures (capx) scaled by total assets (at). Source: Compustat.
Cash_flow_v	The standard deviation of a firm's return on assets over the previous 5 years (firms are required tohave at least 3 years of data during the prior 5 years to enter the sample), following Klasa et al. (2018).
Asset	The natural logarithm of total assets (at). Source: Compustat
Leverage	Book value of long-term debt (dltt) plus debt in current liabilities (dlc) divided by the book value of assets (at). Source: Compustat.
MB	Market value of assets (prcc_f∗csho + at–ceq) divided by the book value of assets (at). Source: Compustat.
RD	R&D expenditures (xrd) scaled by total assets (at). Source: Compustat.
ln(1+Delta)	The natural logarithm of 1 plus DELTA, where DELTA is the change in the dollar value of the executive's wealth for a 1-percentage-point change in stock price (following Guay (1999), Core and Guay (2002), and Coles, Daniel, and Naveen (2006)).
ln(1+Vega)	The natural logarithm of 1 plusVEGA, where VEGA is the change in the dollar value of the executive's wealth for a 0.01 change in the annualized standard deviation of stock returns (following Guay (1999), Core and Guay (2002), and Coles et al. (2006)).
ln(1+Total_Pay)	The natural logarithm of 1 plus the dollar value of the executive's total annual compensation (tdc1). Source: ExecuComp.
ln(1+OptionVal)	The natural logarithm of 1 plus the dollar value of the executive's annual option awards (option_awards_blk_value before the FAS 123R and option_awards_fv after FAS 123R). Source: ExecuComp.
ln(1+StockVal)	The natural logarithm of 1 plus the dollar value of the executives' annual stock grant (rstkgrnt before the FAS 123R and stock_awards_fv after the FAS 123R). Source: ExecuComp.
ln(1+Cash)	The natural logarithm of 1 plus the dollar value of the executive's annual cash compensation (total_curr). Source: ExecuComp.
ln(1+OptioNum_Unex_Exer)	The natural logarithm of 1 plus the number of vested but unexercised options (opt_unex_exer_num). Source: ExecuComp.

Innovation_corporate_culture Corporate culture value of innovation from Li et al. (2021).

Figure 2 Pre-trends and the effect of sports inspiration on executives' compensation vega

This figure presents the coefficient estimates from the OLS regression results, capturing the dynamic effects of sports inspiration on executives' compensation vega, as reported in Table 3, Column (1). The x-axis represents the years relative to the event year of sports inspiration, while the y-axis shows the coefficient estimates on the interaction terms corresponding to 2 and 1 years prior to, and each of the 3 years following, the year of sports inspiration. Vertical lines indicate 90% confidence intervals.