Award-winning CEOs and corporate innovation

Hang Pham*
Chris Veld**
Yulia Veld-Merkoulova***

June 26, 2018

Abstract

We examine the roles of award-winning chief executive officers (CEOs) in corporate innovative activities. We find no significant difference in corporate innovation outputs between media award-winning CEOs and a matched sample of predicted winners. However, firms headed by winners of non-media awards generate, on average, 0.54% more patents and 0.35% more citations per patent the year after the award. Firms led by winners of non-media awards also exhibit a better employee treatment following the award year, which results in better employee commitment and productivity, eventually leading to higher innovation success. Firms headed by winners of media awards attract a larger coverage of financial analysts following the award year, which exerts more pressure on managers to meet short-term goals and hence impedes the firm's long-term innovation projects. Our findings are consistent with the view that firms led by media award-winning CEOs do not always engage in more innovative activities because of the "burden of celebrity." Winners of non-media awards are not affected by this burden.

JEL Classification Codes: G30, O31

Keywords: Media award, Non-media award, innovation, CEO personal award, CEO attribute.

Data availability: Data are available from the data sources identified in the paper.

* Corresponding author. Department of Banking and Finance, Monash University; e-mail vu.pham@monash.edu.
**Department of Banking and Finance, Monash University, e-mail chris.veld@monash.edu.
*** Department of Banking and Finance, Monash University; e-mail yulia.veld-merkoulova@monash.edu.

We thank Christine Brown, Stephen Brown, Candie Chang, Xin (Simba) Chang, Yangyang Chen, Abe de Jong, Dionysia Dionysiou, Ying Dou, Bart Frijns, Alan Goodacre, Vidhan Goyal, Philip Gharghori, Philip Gray, Patrick Herbst, Hue Hwa Au Yong, Kai Li, Ben Marshall, Lily H.G. Nguyen, Edward Podolski, Joshua Shemesh, Isaac Tabner, Nuttawat Visaltanachoti, K.C. John Wei, Barry Williams, Jin Yu, Emma Zhang, Wenrui Zhang, Zhongyan Zhu, and seminar participants at Monash University, University of Stirling, and conference participants at the New Zealand Finance Colloquium (Palmerston North, February 2018), the Monash Q-Group Colloquium (Melbourne, March 2018), and the Financial Markets and Corporate Governance Conference (Melbourne, April 2018) for their helpful comments.

Award-winning CEOs and corporate innovation

Abstract

We examine the roles of award-winning chief executive officers (CEOs) in corporate innovative activities. We find no significant difference in corporate innovation outputs between media award-winning CEOs and a matched sample of predicted winners. However, firms headed by winners of non-media awards generate, on average, 0.54% more patents and 0.35% more citations per patent the year after the award. Firms led by winners of non-media awards also exhibit a better employee treatment following the award year, which results in better employee commitment and productivity, eventually leading to higher innovation success. Firms headed by winners of media awards attract a larger coverage of financial analysts following the award year, which exerts more pressure on managers to meet short-term goals and hence impedes the firm's long-term innovation projects. Our findings are consistent with the view that firms led by media award-winning CEOs do not always engage in more innovative activities because of the "burden of celebrity." Winners of non-media awards are not affected by this burden.

JEL Classification Codes: G30, O31

Keywords: Media award, Non-media award, innovation, CEO personal award, CEO attribute.

Data availability: Data are available from the data sources identified in the paper.

I. Introduction and Motivation

The increasing importance of innovation as a major engine of economic growth has led to a growing literature that empirically links innovation and company characteristics.[1] In the context of this literature, several studies look at the relation between personal managerial traits and innovation activities (Galasso and Simcoe, 2011; Hirshleifer, Low and Teoh, 2012; Sunder, Sunder and Zhang, 2017). Another strand of literature documents that the status effect induced by chief executive officers (CEOs) winning media awards can influence stock returns and operating performance (Wade, Porac, Pollock and Graffin, 2006; Malmendier and Tate, 2009; Ammann, Horsch and Oesch, 2016). Thanks to the increase in media visibility after winning a media award, CEOs can better signal their ability and effort, thereby gaining more trust from stakeholders and enjoying more favorable business deals. These advantages are important for CEOs in pursuing innovative projects, which are risky and require a high investment. The status effect of winning media awards on corporate innovation has yet to be investigated and is one of the topics of our paper. In addition, we take a further step to examine the effect of non-media award-winning CEOs and corporate innovation success. Unlike media awards, non-media awards are less likely to be influenced by CEOs' and/or firms' strategic disclosure (Blankespoor and DeHaan, 2015). Utilizing a set of non-media awards helps improve the precision of our test of the role of award-winning CEOs in corporate innovation performance. Our study is aligned with the work of Ammann et al. (2016), who investigate the performance and innovative activity

[1] For example, studies include company characteristics such as corporate governance (Sapra, Subramanian and Subramanian, 2014)), analyst following (Li, Griffin, Yue and Zhao, 2013), stock liquidity (Fang, Tian and Tice, 2014), and non-executive employee stock options (Chang, Fu, Low and Zhang, 2015).

of companies as competitors of either winners or predicted winners.[2] Instead, our paper focuses on winners by comparing them with predicted winners. Therefore, Ammann et al. (2016) study the indirect effect of the awards by looking at the effect on those who do not win awards. We study the direct effect of the actual winners.

We find no significant difference in corporate innovation outputs between media award-winning CEOs and a matched sample of non-winners (predicted winners). However, firms headed by winners of non-media awards generate, on average, 0.54% more patents and 0.35% more citations per patent the year following the award year, without a corresponding increase in input (research and development, or R&D, spending). The effect of non-media awards on corporate innovation is weakened in the two and three years after the award announcement year. The finding is robust to variations in sample size and alternate model specifications.

We further investigate the mechanisms that plausibly account for our results. We find that firms led by winners of non-media awards exhibit a higher employee relation score following the award year, which suggests better employee commitment and productivity, eventually leading to higher innovation success. In contrast, firms headed by winners of media awards attract a larger coverage of financial analysts following the award year, which exerts more pressure on managers to meet short-term goals and hence, impedes the firm's long-term innovation projects as suggested by He and Tian (2013).

[2] Ammann et al. (2016) find an increase in the risk taking and innovation activity of the competitors of award-winning CEOs, which leads to the significant positive stock market performance of those competitors subsequent to the award.

Our results are consistent with the view that firms led by media award-winning CEOs do not always engage in more innovative activities because of the special nature of innovation activities and the "burden of celebrity." After all, innovation is a high-risk activity that requires a long-term commitment of corporate resources and managerial talent (Holmstrom, 1989). The superstar CEOs, who are the winners of media contests and become the center of attention following their media awards, often spend more time on activities outside the company (e.g., writing books or sitting on outside boards) and/or spend more time on leisure activities (Malmendier and Tate, 2009). Such pressure and distraction from being a center of media attention are expected to counteract the positive impacts of winning media awards on corporate innovation. Consequently, these media award-winning CEOs do not perform better relative to non-winning CEOs regarding innovation activities.

Our finding that firms led by non-media award winners appear to engage in greater corporate innovation output is consistent with the view that a non-media award is a less biased proxy for personal competence and managerial ability. In addition, induced by the status change following the victory of CEO personal awards, firms led by non-media award winners can benefit from the CEO's reputation and networking to attract the best talent and enjoy more favorable business commitments for risky projects. These benefits make investments in innovation more accessible and eventually boost the innovative activities of firms with non-media award-winning CEOs.

Our study is the first to utilize a unique set of CEOs non-media awards in investigating firm innovation outcomes. Since status changes following non-media award competitions can affect various corporate decisions and stakeholder behaviors, the findings of this study provide a

potentially fruitful avenue for future research that investigates stakeholders and corporate outcomes in a non-media setting.

This study also sheds more insight on the literature examining CEOs in the media (see Wade et al. (2006), Malmendier and Tate (2009), and Ammann et al. (2016)). Our paper suggests that changes in CEO status following award competitions also matter in corporate innovative activities. We provide new evidence on the role of CEO personal traits in corporate innovation. The finding contributes to the broader literature that explores how life, career experience, and personal attributes affect CEO style and corporate decisions (Malmendier, Tate and Yan, 2011; Custodio, Ferreira and Matos, 2013; Benmelech and Frydman, 2015; Dittmar and Duchin, 2015; Bernile, Bhagwat and Rau, 2016; Cronqvist and Yu, 2017).

The remainder of this paper is organized as follows: Section II discusses related literature. Section III develops the hypotheses. Section IV presents the data and main variables while Section V discusses our methodology. Section VI discusses the main results. Section VII discusses possible channels. Section VIII presents robustness checks and Section IX concludes the paper.

II. Related Literature

A. CEO Attributes and Corporate Innovation

According to a recent survey by PwC (2011), the drive for innovation should ensue from the CEO and other executive leadership by creating a culture that is open to new ideas and

nourishes as well as rewards fresh thinking.[3] In this sense, even though top executives have little direct influence over innovation, they play an essential role in creating an environment that extracts the most value from the firm's human capital, leading to corporate innovation success.[4] The academic literature documents several characteristics of top executives that can affect corporate innovative activities, such as CEO overconfidence (Galasso and Simcoe, 2011; Hirshleifer et al., 2012), networking (Faleye, Kovacs and Venkateswaran, 2014), and managerial ability and skills (Chen, Podolski and Veeraraghavan, 2015; Custodio, Ferreira and Matos, 2017).[5] Since CEO characteristics are important to innovation success, a change in CEO attributes could also lead to a change in firm innovation activities. Previous studies show that events that affected top executives such as death and severe health issues (Falato, Kadyrzhanova and Lel, 2014; Bennedsen, Perez-Gonzalez and Wolfenzon, 2018; Masulis and Zhang, 2018) and divorce (Galbraith, 2003; Neyland, 2016) are associated with firm performance. Therefore, we

[3] The PwC survey is available at: https://www.pwc.com/gx/en/corporate-strategy-services/assets/ceosurvey-innovation.pdf (retrieved on June 22, 2018).

[4] There is evidence that employee compensation (Chang et al., 2015) and employee treatment (Chen, Chen, Hsu and Podolski, 2016; Chen, Leung and Evans, 2016) are important factors affecting innovative success.

[5] While this paper focuses on the roles of CEOs and other key stakeholders in corporate innovation, numerous other factors matter for innovation, including stock market liquidity (Fang et al., 2014), equity market development (Hsu, Tian and Xu, 2014), analyst coverage (Li et al., 2013), anti-takeover provisions (Chemmanur and Tian, 2013), local banking competition (Cornaggia, Mao, Tian and Wolfe, 2015), firm alliances (Schilling and Phelps, 2007), business groups (Belenzon and Berkovitz, 2010), institutional ownership (Aghion, Van Reenen and Zingales, 2013), employment non-discrimination acts (Gao and Zhang, 2017), and smoke-free working environments (Gao, Hsu, Li and Zhang, 2018).

expect that changes in CEO status, as induced by winning CEO awards, will have an impact on corporate innovation.

B. Media Award-Winning CEOs and Firm Performance

A growing strand of literature suggests important roles of media award-winning CEOs in corporate performance. For example, Wade et al. (2006) find that firms that employ an award-winning CEO enjoy positive abnormal stock returns during the trading days immediately following the announcement of the award winners. However, the authors also show that the immediate positive abnormal returns can eventually reverse and become negative for the remainder of the year following the award announcement, despite no significant change in company profitability as measured by accounting returns. Malmendier and Tate (2009) examine shifts in CEO status due to CEO awards conferred by major national media organizations and find that award-winning CEOs subsequently underperform, in terms of both stock and operating performance, relative to a matched sample of non-winning CEOs. The literature also suggests that the status effect matters for creative activities. Ammann et al. (2016) investigate the effect of superstar CEOs on their competitors and find significant positive stock market performance for their competitors subsequent to the award announcement.[6]

[6] Ammann et al. (2016) follow Malmendier and Tate (2009) to define superstar CEOs as those who receive prestigious media awards. Our definition of award-winning CEOs is broader, since it includes a more comprehensive set of awards from both media and non-media organizations.

C. Media versus Non-Media Awards as Measures of CEO Ability

Prior studies on award-winning CEOs mainly focus on media-based awards. The mere use of media-based information, however, can result in biased findings. Blankespoor and DeHaan (2015, p7) suggest that "boards of directors, external stakeholders, and researchers should be cautious in using media coverage as an objective measure of CEO talent or ability." Specifically, the authors find that CEOs and firms can influence CEO media coverage by strategically disclosing the content and context of firm-related media articles. An implication of Blankespoor and DeHaan (2015) is that media visibility, as induced by winning media awards, could provide value to CEOs and/or firms in a variety of ways, giving considerable incentives for CEOs and/or companies to influence CEO media coverage and eventually affect CEOs' chances of winning media-based awards. Therefore, media visibility might not be naturally bestowed on the ability of CEOs and, thus, media-based awards might not be a clean setting to test for the relation between CEO award-winning status and corporate innovation outcomes. To address this concern, we also utilize information on non–media-based awards, which are awards granted to CEOs by non-media organizations.[7] In our award sample, these non-media awards are prestigious and granted by reputable organizations. Non-media awards are bestowed upon CEOs who make a significant contribution to a particular field. In this sense, the selection criteria of

[7] We find that the CEOs in our sample received a variety of non-media awards. Several CEOs in our sample received prestigious awards from the President of the United States, the Chamber of Commerce, and so on.

non-media awards are not limited to CEO performance in the firm but go beyond to reward the CEO for a broader contribution to the CEO's business field.[8]

The reasons for utilizing non-media awards are twofold. First, compared to media-based awards, non-media award winners are not always the center of media attention. Thus, the incentives for CEOs and firms to influence non-media visibility are not as strong. Second and more importantly, while CEOs and/or firms can affect the content and context of firm-related media in order to influence the chances of becoming a media-based award winner, it is often more challenging, if not impossible, for them to manipulate the chances of winning many non-media awards (e.g., awards granted by the president for great inventors in a country or awards given to a CEO of the year by the Chamber of Commerce). As argued by Blankespoor and DeHaan (2015), journalists take into account both readership demand and production costs in their coverage decisions. In this sense, the chances of a CEO receiving an award from a magazine or media organization will be influenced by how appealing the CEO's name is to the readers and how available the CEO's relevant public information is to the journalist. Non-media organizations such as the National Management Association are not subject to readership demand and production costs and, hence, are less likely to be influenced by CEOs' and/or firms' strategic disclosures. Therefore, non-media awards are expected to be a less biased proxy for personal competence and managerial ability.

[8] We apply filters to the non-media awards to ensure that they are relevant to our setting. We discuss this issue in more detail in Section IV.A.

III. Hypothesis Development

A. Media Awards

CEO media awards are expected to broaden CEOs' media visibility as well as enhance their status and power within the firm (Malmendier and Tate, 2009). This status effect impacts firm innovation activities in several ways. *First*, the increasing media exposure following a CEO's media award announcement could shift power toward award-winning CEOs, hence boosting their risk-taking attitude and even encouraging their overconfidence. Prior literature has shown that firms led by overconfident CEOs tend to achieve higher innovation outputs (Galasso and Simcoe, 2011; Hirshleifer et al., 2012). It is, therefore, possible that award-winning CEOs are more likely to lead their firm to innovation success. *Second,* award-winning CEOs, with increased reputation from receiving awards, are likely to be better trusted by shareholders and other stakeholders (Baik, Farber and Lee, 2011; Demerjian, Lev, Lewis and McVay, 2012). These CEOs are therefore less likely to be discouraged from investing in risky innovation projects within the context of career concerns because their reputation can signal their superior managerial skills (Narayanan (1985)).[9] In addition, winning a media award signals investors and other firm stakeholders that the company is being managed by a capable CEO. Greater trust can thus result in lower financing costs and more favorable business contracts, making investments in innovation easier for firms led by media award-winning CEOs. *Third,* being granted an award offers CEOs more opportunities to build widespread networks, which add value to firm innovation by facilitating investments in corporate innovation, as suggested by Faleye et al.

[9] Career concerns refer to managers' attempts to adjust their behavior deliberately to signal their abilities to the labor market and hence their reputation and future career prospects.

(2014). *Fourth*, opportunities to work with a famous award-winning CEO can attract the best talent. Prior research shows that non-CEO top management team members receive higher pay when they work for a high-status CEO (Graffin, Wade, Porac and McNamee, 2008). Since employee compensation and treatment are important factors affecting innovative success (Chang et al., 2015; Chen et al., 2016), we can expect firms led by award-winning CEOs to be attractive destinations for the best talent, which is an engine to drive corporate innovation success.[10] Our first hypothesis is as follows.

H1A: *Firms led by media award-winning CEOs generate more ex post innovation output than the matching firms of non-winning CEOs.*

However, high status from winning media awards does not necessarily guarantee innovation success. A strong reputation is associated with heightened performance expectations, consequently, these expectations could act as a "natural brake" on the unfettered accumulation of CEO power, prestige, and compensation (Fombrun, 1996). While increased media exposure following a CEO's award can boost firm profitability, it can also shift power toward the CEO and induce perquisite consumption in the spirit of Jensen and Meckling (1976). Malmendier and Tate (2009) show that media award-winning CEOs who become the center of attention following prestigious media awards often spend more time on activities outside the company, such as writing books, sitting on outside boards, and spending more time on leisure activities. They are also more likely to engage in earnings management to "maintain expected superstar performance as long as possible" (Malmendier and Tate, 2009, p4). Therefore, media award-winning CEOs subsequently underperform relative to non-winning CEOs (Wade et al., 2006; Malmendier and Tate, 2009; Ammann et al., 2016). Since innovation is a high-risk activity that requires the long-

[10] We measure innovation output by patents and citations, as described in Section IV.B.

term commitment of corporate resources and managerial talent (Holmstrom, 1989), we expect the distractions and pressure to have a negative impact on companies under the lead of media award-winning CEOs because of extreme media exposure. Our second hypothesis, competing with H1A**,** is as follows.

H1B: *Firms led by media award-winning CEOs generate less ex post innovation output than the matching firms of non-winning CEOs.*

B. Non-Media Awards

Media coverage is essential in shifting CEO status. Although the media exposure of non-media award winners is lower than that of media award winners, we argue that winning non-media awards can shift a CEO's status for two reasons. First, the media also reports information on non-media awards, especially prestigious ones; therefore, non-media award winners are exposed to a particular level of media coverage. Second, even in the extreme case in which non-media awards are not announced through media channels, it is reasonable to assume that the reputation of non-media award-winning CEOs is still well perceived by the target audience of these awards, who could also be close firm stakeholders. Therefore, the advantages CEOs gain from winning non-media awards can affect corporate innovation in the same way as the benefits that media awards bring. In addition, because non-media award winners are less exposed to extreme media coverage, the negative effects of media awards, such as distractions and pressure, are less likely to affect non-media award-winning CEOs.

Moreover, winning awards could suggest that a CEO has talent and ability. Studies by Chen et al. (2015) and Custodio et al. (2017) document that managerial ability and general skills

are essential to corporate innovative activities. We expect that firms managed by a non-media award-winning CEOs have better innovation success. Our next hypothesis is as follows:

H2: *Firms led by non-media award-winning CEOs achieve greater ex post innovation output than the matching firms of non-winning CEOs do.*

IV. Data Description

A. Data on CEO Awards

We examine the impact of award-winning CEOs on the performance of corporate innovation activities. We obtain a full list from ExecuComp of Standard & Poor's 1500 firms and their CEOs for the period 1992–2010.[11] A database with information related to CEO personal awards does not exist; therefore, we hand-collected data from Marquis Who's Who, one of the most comprehensive databases with CEOs' personal biographical details.[12] We discover that this database sometimes contains incomplete information, that is, several CEOs' personal biographical pages include the name of an award but not the year the award was granted. In such cases, we access the official website of the award, if possible, and manually seek the award

[11] We restrict our sample to 1992–2010 due to the unavailability of data on firm patents and citations. We rely on the most up-to-date patent application and citation data from Kogan, Papanikolaou, Seru and Stoffman (2017), who collected all patent data from Google Patents for the period 1926–2010. Data on firm patents and citations after 2010 are unavailable.

[12] Others who use personal biographical information from Marquis Who's Who to construct their key variables include, for example, Bernile et al. (2016), Benmelech and Frydman (2015), Cronqvist and Yu (2017), Duchin and Sosyura (2013), and Schoar and Zuo (2017).

information. We also access several other databases, including NNDB.com, Reference for Business, Bloomberg.com, Wikipedia, and Google searches, to cross-check the information for each award, as well as other information on CEO characteristics (which will later be used as control variables) obtained from Marquis Who's Who. We are thus able to compile a fine-grained, comprehensive data set with (i) the name of the award, (ii) the year of the award, and (iii) the organization that granted the award.

Motivated by Malmendier and Tate (2009) and Wade et al. (2006), who study CEO media superstars who are winners of media-based CEO of the Year contests, we classify our award sample into two main categories: media-based and non-media–based awards. We define media awards as awards granted by media organizations and non-media awards as those given by non-media agencies. According to the 113th Senate Manual containing the "Standing rules, orders, laws and resolutions affecting the business" of the U.S. Senate, the term *media organization* is defined as those "engaged in disseminating information to the general public through a newspaper, magazine, other publication, radio, television, cable television, or other medium of mass communication."[13] Lacey (2002, p6) book on key concepts in media studies mentions that "media businesses are organizations that produce media texts." We follow these definitions to categorize media awards as those granted by organizations that produce media products through a newspaper, magazine, other publication, radio, television, or other form of mass communication. Although our definition of media awards is quite broad, the *media* awards in our sample are mostly granted by a magazine, newspaper, or journal. We consider other

[13] The 113th Congress Senate Manual is available online at https://www.govinfo.gov/content/pkg/SMAN-113/pdf/SMAN-113.pdf (retrieved February 5, 2018).

organizations that do not satisfy these media criteria as non-media organizations. Awards granted by non-media organizations are categorized as non-media awards.

In our setting, we restrict our sample to awards that are granted to CEOs for their role as a company leader and we exclude awards that are awarded for personal achievement, such as an award for excellent academic performance in an MBA program. We also exclude awards that are granted to CEOs based on their services/contributions to the community, because these awards are not likely granted based on their firm's past performance but, rather, on the firm's/CEO's personal contribution to the community.[14] Excluding these awards will improve the effectiveness of our selection model, which is discussed in Section V.A.

Using the name of each award, we access the website of the award, if possible, or search the Internet using Google to understand the nature of the award by screening for its description, selection process, and, importantly, the organization who granted the award in order to classify the award as media or non-media.[15] For example, we classify the award Best-Performing CEOs granted by Forbes Magazine as a Media award. We classify the award National Medal of Technology and Innovation as a non-media award because it is bestowed by the President of the United States and not by an agency that produces media text, such as a magazine or a

[14] An example of a community award is the Exemplary Community Leadership award, granted by the National Conference for Community and Justice.

[15] The sample of Malmendier and Tate (2009) includes awards from Ernst & Young, which we classify as *Non-media* awards because Ernst & Young is not a media organization. In untabulated results, we repeat our main analysis using a sample that includes the Ernst & Young awards as media awards and find that our results are unchanged. The results are available from the authors upon request.

newspaper.[16] To separate the effects of winning media awards and non-media awards, respectively, we exclude from our sample CEOs who are granted both media and non-media awards. The full lists of media and media awards are presented in the Appendix. Detailed information on our award sample is reported in Table 1.

[Please insert Table 1 here]

Panels A and B of Table 1 present the number of winners by years and the total number of awards rewarded for media and media awards, respectively. Over the period from 1993 to 2010, there were 212 media award winners and 194 non-media award winners.[17] A CEO can be granted several awards in a given year. Therefore, we also report the number of winners by the total number of awards rewarded each year. Panel C shows the number of award winners by gender. We generally find more male than female winners in both the media and non-media award samples.

B. Measuring Innovation

We measure innovation activity both as a resource input for R&D and as an innovation output. The resource input is RD, measured as R&D spending scaled by book assets. Measures of innovation outputs are based on the patent activity and impact factors of those patents. Our first

[16] National Medal of Technology and Innovation is the nation's highest honor for technological achievement, bestowed by the president of the United States on CEOs of America's leading innovators. Information about this award is available at http://www.uspto.gov/learning-and-resources/ip-programs-and-awards/national-medal-technology-and-innovation-nmti. (Retrieved on June 22, 2018).

[17] We start our award sample in 1993 (instead of 1992, when the ExecuComp database begins) because we use one-year-lagged variables for our prediction model to predict award winners.

measure of innovation output is based on the number of patents applied for by each firm each year. However, a simple patent count captures innovation success imperfectly, because patent innovations vary widely in technological and economic significance. Citations of a firm's patents can better reflect these patents' technological or economic significance. Therefore, the second measure of innovative output is based on citations per patent, which is measured by the total number of citations of the firm's filed (and eventually granted) patents, scaled by the number of patents filed (and eventually granted). The idea behind the second proxy of innovation output is that more significant and revolutionary patents will be cited more frequently, compared with more trivial patents. However, owing to the finite duration of the sample, citations suffer from truncation bias. Because citations are received for many years after a patent has been filed, patents filed in later years have less time to accumulate citations than those filed in earlier years. To address this issue, we adjust the citation count of each patent following a procedure suggested by Hall, Jaffe and Trajtenberg (2001, 2005).

We use the patent application and citation data of Kogan et al. (2017), which are also used by Chang, Chen, Wang, Zhang, and Zhang (2018), Cohen, Gurun and Kominers (2016, 2017) and Lu and Wang (2018).[18] Kogan et al. (2017) collect all patent data from Google Patents for the period 1926–2010.[19] Due to the right-skewed distributions of patent counts and citations per patent, we use the natural logarithm of these variables. Specifically, PATENT is the natural

[18] The data are available at https://iu.app.box.com/patents. (Retrieved on June 22, 2018).

[19] The data include all patent applications filed and eventually granted during this period. Kogan et al. (2017) link patent numbers to a firm's Center for Research in Security Prices (CRSP) identifier when the filer is a public firm in the CRSP database. We set firms with missing innovation data as having zero patents and citations.

logarithm of one plus the number of patent counts and CITATION is the natural logarithm of one plus the number of citations per patent.

C. Control Variables

We construct and collect a number of standard firm-level variables that have been shown to affect innovative activity. Specifically, Hall and Ziedonis (2001) find that firm size is one of the key determinants of innovative activity. Firm size (SIZE) is defined as the natural logarithm of total assets. Consistent with the literature on corporate innovation (Hirshleifer et al., 2012; Li et al., 2013; Chang et al., 2015), we collect and construct other firm-level variables, including the return on assets (ROA), Tobin's Q (TOBIN_Q), leverage (LEVERAGE), and cash holdings (CASH). Specifically, TOBIN_Q is market value of equity plus total assets minus the book value of equity, all divided by total assets, LEVERAGE is the ratio of total debt to book assets, ROA is the ratio of operating income to book assets, and CASH is measured as cash and assets readily convertible to cash, scaled by book assets.

In addition, we consider controlling for CEO characteristics. The literature documents several CEO attributes that could affect firm performance, such as gender (Huang and Kisgen, 2013), education (Bertrand and Schoar, 2003), tenure (Simsek, 2007), and age. Therefore, we include in our baseline analysis several control variables for CEO characteristics, such as the CEO's age (CEO_AGE), tenure (CEO_TENURE), and gender (FEMALE), where CEO_AGE is the age of the CEO in years, CEO_TENURE is the number of years since the current CEO became the CEO, and FEMALE is a dummy variable that equals one if the CEO is female and zero otherwise. Information on CEO gender, age, and tenure are obtained from ExecuComp. In our robustness check, discussed in Section VII.A, we control for other attributes that relate to CEO educational and demographic backgrounds.

V. Methodology

A. Identification Strategy

Our classification of CEO awards into media and non-media categories allows us to examine the impact of each award group on corporate innovation activities. Our study may be subject to endogeneity issues, in that a change in firm innovation could arise from firm characteristics and not necessarily from CEO characteristics. We address this possibility using a prediction model as an identification strategy. Motivated by the work of Malmendier and Tate (2009), we compare the performance of an award winner's firm to the matched firm's had the CEO not won the award. To do so, we first construct a nearest-neighbor matching estimator. We then estimate a logit regression to identify observable firm and CEO characteristics that predict CEO awards. Finally, we compare the average ex post performance of award winners to the average among all non-winning CEOs.

Similar to Malmendier and Tate (2009) setting, ours does not allow us to observe the exact criteria used to choose the award winners. To address this concern, we follow Malmendier and Tate (2009) and run a logit regression to predict CEO awards based on firm and CEO characteristics.[20] Specifically, for all firms in our sample, we set the binary dependent variable to one if the firm's CEO won an award in the current year and zero otherwise. We then regress the award indicator on firm size (SIZE), and previous stock returns ($RETURN_{t-1}$ and $RETURN_{t-2}$), as well as control for CEO age (AGE), tenure (TENURE), and gender (FEMALE). We add to our

[20] Firm and CEO characteristics do not necessarily present the full criteria used to select an award winner. There is a possibility that unobserved factors can be also relevant to the award selection process. In our matching procedure, we only consider observable characteristics.

prediction model other variables that can affect firm innovation, including the past year's R&D spending scaled by total assets (RD), Tobin's Q (TOBIN_Q), and cash holdings (CASH). All firm characteristic variables are measured the year preceding the award year. We include year and industry dummies to control for variations in time and industry, respectively.[21] In this setting, we assume the criteria to select winners of media and non-media awards are similar.[22]

We run the logit model separately for media and non-media awards. We then use the predicted values from each logit regression to construct the nearest-neighbor matched sample for the award winners. In each year, we choose, without replacement, the non-winning CEOs with the propensity scores closest to those of each actual media/non-media award winners. We name these samples the predicted media winners and the predicted non-media winners, respectively.

B. Hypothesis Testing

To test H1A and H1B, we analyze the ex post firm innovation outputs of media award-winning firms and compare these with the sample of predicted media winners, using a regression framework. Specifically, we regress innovation outputs on the MEDIA dummy and several firm-level control variables and CEO characteristic control variables, as described in Section IV.C. We use the following regression model:

[21] We use two-digit SIC codes for our industry dummies.

[22] Ideally, we should have included CEO media coverage in our logit model to predict media award winners similar to the approach of Blankespoor and DeHaan (2015). However, we do not have access to the data that they use to construct this measure. Nevertheless, the inclusion of non-media awards in our analysis is helpful in disentangling the effect of media coverage on the relation between CEO awards and corporate innovation.

$$(1)\ INNOVATION_{i,t+k} = \alpha + \beta MEDIA_{i,t} + \sum_{j=1}^{n} \gamma_j FIRM\_CONTROL_{i,j,t} + \sum_{h=1}^{m} \delta_h CEO\_CONTROL_{i,h,t} + \varepsilon_{i,t}$$

where $INNOVATION_{i,t+k}$ is either the measure of innovation input (RD) or innovation output (PATENT and CITATION) of firm i in the k years after the award year. We examine the effect of winning CEO awards on firm innovation output for periods of one year (k = 1), two years (k = 2), and three years (k = 3) following the award year. The dummy variables MEDIA is equal one if the CEO of the firm wins a media award in the current year and zero if the CEO is a predicted winner. The variable FIRM_CONTROL includes firm size (SIZE), stock returns over the past one and two years ($RETURN_{t-1}$ and $RETURN_{t-2,}$ respectively), last year's R&D spending scaled by total assets (RD), the return on assets (ROA), Tobin's Q (TOBIN_Q), leverage (LEVERAGE), and cash holdings (CASH). The variable CEO_CONTROL includes the CEO's age in years (AGE), tenure in years (TENURE), and gender (FEMALE). We also take into account the industry and year dummies.

To test H2, we run the following regression model:

$$(2)\ INNOVATION_{i,t+k} = \alpha + \beta NON\_MEDIA_{i,t} + \sum_{j=1}^{n} \gamma_j FIRM\_CONTROL_{i,j,t} + \sum_{h=1}^{m} \delta_h CEO\_CONTROL_{i,h,t} + \varepsilon_{i,t}$$

This equation is similar to equation (1), except that we replace MEDIA by the dummy variable NON_MEDIA, which takes the value of one if the CEO wins a non-media award in the current year and zero if the CEO is a predicted winner.

VI. Results

A. Univariate Analysis before Matching

Table 2 provides summary statistics for firm and CEO characteristics across award-winning CEOs and non-winning CEOs. Panels A and B report the results for media and non-media awards, respectively. The column W−N shows the differences in the mean between award winners and non-winners.

[Please insert Table 2 here]

According to Panel A of Table 2, on average, firms led by media award-winning CEOs are bigger, hold more cash, have a higher Tobin's Q, are less leveraged, and are more profitable in terms of returns on assets compared to firms run by executives who did not win a media award. The media award winners tend to have a longer tenure and are more likely to be female. The latter result can be explained by the fact that there are several awards granted only to women in our media awards sample.[23] CEOs winning media awards are more likely to hold an MBA or a PhD, tend to attend Ivy League institutions, and are more likely to have a financial or technical educational background. In addition, they tend to own individual patents, are more likely to have been born outside of the United States and are more likely to have been born during the decade leading up to the Great Depression. All these differences between media winners and non-winners are statistically significant at the 1% level. Regarding past returns, there is, however, no statistical difference in the stock returns of the previous one year ($RETURN_{t-1}$) and the previous

[23] An example of media awards specifically for women is The Most Powerful Women in American Business, from Fortune Magazine.

two years ($RETURN_{t-2}$) between the two groups. With regard to our key variables of interest, PATENT and CITATION are statistically higher for award winners, whereas there is no statistical difference in R&D spending between the two groups. The Business Equipment and Shops industry groups are also significantly (at the 1% level) overrepresented among media winners. These results suggest that media winners are different from media non-winners in a variety of aspects.

Regarding non-media awards, the results from Panel B of Table 2 suggest that, on average, firms led by non-media winners are bigger and experience higher returns in the previous year and a higher Tobin's Q compared to firms run by non-media non-winning CEOs. The non-media award-winning CEOs are older, have longer tenure, and are more likely to be women. A few non-media awards are specifically given to female CEOs, which probably leads to the positive and significant coefficient for the variable FEMALE.[24] Moreover, non-media award–winning CEOs are significantly distinguishable from non-winners in terms of educational background, demographic factors, and experience. With regard to innovation activities, all three measures PATENT, CITATION, and RD are significantly higher at the 1% level for firms led by winning CEOs compared to their peers run by non-winning CEOs. The Business Equipment industry group is significantly (at the 1% level) over-represented among non-media winners.

[24] An example of a non-media award granted only to women is the Women of Excellence Award of the National Association for Female Executives.

B. Univariate Analysis after Matching

Our main identification approach is to construct a nearest-neighbor matching estimator. Following Malmendier and Tate (2009), we run a logit regression to predict CEO awards based on firm and CEO characteristics. The results of logit model regressions are presented in Table 3.

[Please insert Table 3 here]

Columns (1) and (2) of Table 3 report the results of the logit model to predict media and non-media awards, respectively. Consistent with the results in Table 2, CEOs of larger firms or firms with a higher past one year return and a higher Tobin's Q are significantly more likely to win awards. Unsurprisingly, CEOs with longer tenure and female CEOs are also more likely to be award winners. These findings apply to both media and non-media awards. Regarding media awards, the two years' returns and cash holdings are important determinants of award winners. These two variables, however, do not significantly predict non-media award winners. This suggests that the award panels of non-media awards take into account other factors that are not reflected in firm past performance as the criteria for selecting the winners.

In the next step, we then use the predicted values from the logit regression to construct the nearest-neighbor matched sample for award winners. In each year, we choose, with replacement, the non-winning CEOs with the propensity scores closest to those of each actual award winner. We name this sample predicted winners. Table 2 presents the summary statistics for the predicted winners (P) side by side with the summary statistics for the actual winners (W) and the full sample of non-winners (N). We also test for differences in the firm and CEO characteristics across actual and predicted winners. Column (W−P) shows the results for the *t*-test for the difference in means between award winners and predicted winners. Notably, all

matching variables that are included in the first-stage estimation are statistically insignificant for both media and non-media awards.

As discussed earlier in the univariate analysis before matching, media (non-media) winners differ from non-winners in a variety of aspects. After the matching procedure is implemented, the winners and predicted winners are homogeneous in all dimensions included in the prediction model. This homogeneity confirms the quality of the match. Notably, although we do not include firm innovation measures (PATENT, CITATION, and RD) in the predicted model, our matching procedure effectively removes heterogeneity regarding innovation measures between media (non-media) winners and predicted winners. There is no significant difference in innovative activities between winners and predicted winners, whereas the differences between winners and non-winners are very high and significant. The matching procedure generates two homogeneous groups of treated CEOs (winners) and control CEOs (predicted winners) in terms of their firm characteristics. Homogeneity is a key factor that helps minimize endogeneity issues in our regression analysis. However, winners and predicted winners are significantly different regarding CEO educational and demographic backgrounds. Specifically, both media and non-media winners are more likely to hold a Ph.D. degree than the predicted winners and the non-media winners are more likely to have majored in a financial or technical field, hold an individual patent, and to have been born outside of the United States than the predicted winners. We address the heterogeneity in CEO personal characteristics between winners and predicted winners when we control for these characteristics in our robustness checks.

C. Regression Analysis

In our regression framework, the independent variables are innovation activities, measured by PATENT, CITATION, and RD. Our key variable of interest *is* MEDIA (NON_MEDIA), which is equal to one if the CEO is a winner of a media (non-media) award competition and zero if the CEO is a predicted winner of a media (non-media) award. Other explanatory variables include a set of firm characteristics and CEO characteristics. These variables are described in detail in Appendix A. Table 4 presents the regression results after the matching.

[Please insert Table 4 here]

Panel A of Table 4 presents the results for media awards. According to Column (1), the coefficient of MEDIA is not statistically significant, indicating no statistically significant difference in the number of patents between MEDIA award winners and predicted winners. The results are consistent for a period of one, two, and three years after the award year. Regarding CITATION as the measure of innovation output, Columns (2) and (5) suggest that firms led by media award-winning CEOs generated less citations in the periods of one and two years after the award year. However, the effect of winning a media award on future firm patent citations disappears after three years of winning the award. Columns (3), (6), and (9) consistently suggest no significant difference in innovation input (measured by R&D spending) between media winners and predicted winners.

The negative effect of winning a media award on the number of citations can be explained by H1B**.** Specifically, the distractions and pressure due to extreme media exposure can impede the innovation activities of companies led by media award-winning CEOs. This result is consistent with previous findings that media award-winning CEOs subsequently underperform

relative to non-winning CEOs (Wade et al., 2006; Malmendier and Tate, 2009). This result is also aligned with Ammann et al. (2016) who show that media awards have a strong positive effect on competing CEOs, who are typically the matched sample in our empirical design. [25]

Panel B of Table 4 reports the results for non-media awards. The coefficients for innovation outputs $PATENT_{t+1}$ and $CITATION_{t+1}$ in the year immediately after the award year are positive and statistically significant at the 1% level, suggesting that firms obtain more patents and citations in the one-year period after their CEOs win non-media awards. The coefficients for innovation input, RD_{t+1}, are not significant. Recalling that, in Table 2, the R&D spending of non-media winners and of predicted winners differs insignificantly, we find the regression results suggest that, firms led by non-media award winners generate statistically greater corporate innovation output with relatively similar innovation inputs, compared to firms run by predicted winners, implying greater innovation effectiveness. Regarding economic significance, non-media-winning CEO firms generate, on average, 0.54% more patents and 0.35% more citations compared to predicted winners in the first year after the award. In terms of economic significance, this result is equivalent to one additional patent and 17 more citations.

The effect of winning a non-media award on corporate innovation is persistent in the second and third years after the award year. Two years following the award year, non-media

[25] Since the coefficient on MEDIA is picking up whether treatment firms are engaging in more or less innovation compared with matched firms, and the innovative activities of matched firms can increase following a media award to a competitor (in the spirit of Ammann et al. (2016)), the non-significant coefficients do not necessary mean that media awards have no (or a negative) effect on corporate innovation. It could mean that media awards improve the innovative activities of all related firms, which eventually results in the non-significant (or weak) difference in corporate innovation outputs between media award-winning CEOs and a matched sample of non-winners (predicted winners).

award-winning CEO firms are granted 0.54% more patents and their patents are cited 0.41% more than those of the firms of predicted winners. After three years, non-media award-winning CEO firms continue to enjoy success in innovation activities, with 0.48% more patents granted and 0.32% more citations cited, compared to the matching firms of non-winning CEOs. Overall, award-winning CEO firms maintain their superior performance regarding innovation outputs for at least three years after the award announcement. This persistent effect can be explained by the fact that innovation is a long-term activity. Therefore, the effect of winning a non-media award can be gradually transferred to innovation success.

Regarding control variables, we find that firm size and past R&D spending are positively and significantly associated with firm innovation input and output. These findings hold for both media and non-media award samples and are robust for periods of one, two to three years after the award year. Our results are consistent with those of prior studies (e.g., Hirshleifer et al., 2012; Li et al., 2013; Chang et al., 2015) that document that firm size and past R&D spending are two of the main factors that drive innovation activities.

VII. Possible Channels

In this section, we discuss possible underlying mechanisms through which winning CEO awards can affect corporate innovative activities. The first channel relates to employee treatment. The second channel relates to analyst-induced pressure.

A. Impact of winning CEO awards on employee treatment

Employees are key organizational assets (Zingales, 2000; Maslow, 1943; Hertzberg, 1959) and key sources of value creation by inventing new products or building client relationships

(Edmans, 2011).[26] Focusing on corporate innovative activities, Chen, Leung, and Evans (2016) document that firms with an employee-friendly workplace are associated with greater innovative success. Similarly, Chen, Chen, Hsu, and Podolski (2016) find that firms with better employee treatment schemes generate more and better patents. Given that human capital plays an essential role in innovative outputs (Hall, 2002), it is worth examining the potential impact of winning CEO awards on employee treatment schemes.

We start by constructing the employee relations score based on the KLD database. Following Bae et al. (2011) and Chen, Leung and Evans (2016), we construct an employee relations score (RELATION_SCORE) using five strength categories of employee relations, including employee involvement, cash profit-sharing, retirement benefits, union relations, and health and safety. The KLD database assigns a binary rating for each category for each firm-year. RELATION_SCORE is the sum of the rating across the five categories with a higher value indicating a better employee treatment.

To minimize an endogeneity concern that a change in the employee treatment relation of the firm could arise from firm characteristics and not necessarily from the status change following CEO personal awards, following Malmendier and Tate (2009), we compare the employee relation score of an award winner's firm to a predicted winner's firm. Specifically, we construct a nearest-neighbor matching estimator based on firm characteristics described in the baseline models in Table 4. We then compare the average ex post performance of award winners

[26] There is a collective evidence that employee-friendly policies have positive impacts on corporate operational and financial performance (Jiao, 2010; Verwijmeren and Derwall, 2010; Bae et al., 2011; Edmans, 2011; Faleye and Trahan, 2011; Ertugrul, 2013).

to the average among all non-winning CEOs. We use the regression framework to examine the impact of winning CEO awards on employee treatment schemes. Table 5 presents the regression results after the matching.

[Please insert Table 5 here]

In our regression framework, the independent variable is employee treatment measured by RELATION_SCORE. Our key variable of interest is MEDIA (NON_MEDIA), which is equal to one if the CEO is a winner of a media (non-media) award competition and zero if the CEO is a predicted winner of a media (non-media) award. Panel A reports results for non-media awards and Panel B reports results for media awards.

According to Panel A of Table 5, the coefficients for employee treatment RELATION_SCORE in each of the two years after the award year are positive and statistically significant, suggesting that firms, as induced by the status change following CEO personal non-media awards, exhibit a better employee treatment.[27] As the employee is the engine to innovation, enhancing employee treatment can result in better employee commitment and productivity, which eventually leads to higher innovation success. These results are consistent with our previous findings that firms led by non-media award winners generate better corporate innovative activities.

Regarding media award, according to Panel B of Table 5, the coefficients for employee treatment in each of the three years after the award year are all not significant. The results suggest

[27] The results are stronger for the first two years and much weaker and insignificant for the third year after the award year, which is consistent with the short-term impact of the status change following CEO personal awards.

that there is no evidence for improvements in employee treatment following CEO personal media awards. Again, these findings are consistent with our findings that a difference in corporate innovation outputs between media award-winning CEOs and a matched sample of non-winners is either insignificant or weak.

B. Impact of winning CEO awards on analyst coverage

Financial analysts play significant roles in producing information for the firms they cover and providing performance benchmarks such as stock recommendations or earnings forecasts (Frankel, Kothari, and Weber, 2006; Mohanram and Sunder, 2006; Soltes, 2014; Brown, Call, Clement, and Sharp, 2015; Huang, Pereira and Wang, 2017). With a focus on firm creative activities, He and Tian (2013) document that firms covered by a larger number of financial analysts generate fewer innovation outputs. The authors suggest that a larger number of analysts following a firm impose short-term pressure on managers and exacerbate managerial myopia. Managers, in response to such pressure, boost current earnings by passing up long-term investments in risky and innovative projects, eventually resulting in less innovation success (He and Tian, 2013). By examining the decision of an analyst to follow firms, O'Brien and Bhushan (1990) suggest that analysts tend to follow firms with more potential sources of information or with a lower cost of information collection. CEOs, after winning an award, can receive disproportionate attention from clients, competitors, and the media, making their information and performance attractive to financial analysts, which may induce more analyst coverage. Motivated by a seminal work of He and Tian (2013) and a strand of literature examining the roles of

analysts in generating corporate-related information[28], we examine the potential impact of winning CEO awards on analyst coverage.

Following Frankel et al. (2006), He and Tian (2013) and Chen et al. (2014), we measure analyst coverage as the average number of analysts following the firm over the year, obtained from the Institutional Brokers Estimate Systems (I/B/E/S) database. Similar to innovation and employee treatment settings, we compare the analyst coverage of an award winner's firm to a predicted winner's firm. Specifically, we construct a nearest-neighbor matching estimator based on firm characteristics described in the baseline models in Table 4.[29] We then compare the average ex post performance of award winners to the average among all non-winning CEOs. We use the regression framework to examine the impact of winning CEO awards on employee treatment schemes. Table 6 presents the regression results after the matching.

[Please insert Table 6 here]

In our regression framework, the independent variable is the number of analysts following a firm (ANALYST_COV) obtained from the I/B/E/S database. Our key variable of interest is MEDIA (NON_MEDIA), which is equal to one if the CEO is a winner of a media (non-media) award competition and zero if the CEO is a predicted winner of a media (non-media) award. Panel A reports results for the non-media awards and Panel B reports results for the media awards.

[28] See Frankel et al. (2006) for an excellent review of the literature.

[29] We use firm characteristics to construct matching estimators because Bhushan (1989) suggests that firm characteristics are major determinants of the number of analysts following a firm.

According to Panel A of Table 6, the coefficients for analyst coverage ANALYST_COV in each of the three years after the award year are indistinguishable from zero, suggesting that there is no evidence for an increase in analyst coverage following CEO personal non-media awards. In contrast, according to Panel B's results, the coefficients for analyst coverage ANALYST_COV are positive and statistically significant at the 1%-level in each of the three years after the award year. The results suggest that there is a significant increase in the number of analysts following a firm after its CEO win a media award. This finding is aligned with Malmendier and Tate (2009) as CEO media awards are more likely to broaden CEO media visibility and hence, attract a larger coverage of financial analysts. As suggested by He and Tian (2013), increasing analyst's coverage exerts more pressure on managers to meet short-term goals and hence, impedes the firm's long-term innovation projects. This finding is consistent with our previous findings that firms led by media award winners generate less innovation success.

VIII. Robustness Checks

In this section, we conduct several robustness checks. The first set of robustness checks relates to CEO personal attributes and characteristics. The second set of robustness checks relates to innovation characteristics. The final set of robustness checks relates to different sample selections and other control variables.

A. CEO Characteristics

Prior studies suggest that executives' personal attributes and characteristics can be associated with corporate behavior. In our context of innovative activities, it is possible that the results we document so far are driven by heterogeneity in managerial characteristics between winners and predicted winners, as suggested in Table 2. Therefore, we control for several executive

characteristics that are documented in the literature. Specifically, we hand-collect data on executives' educational background from Marquis Who's Who. Following Bertrand and Schoar (2003) and Cronqvist, Makhija and Yonker (2012), we construct a dummy variable, MBA, that takes the value of one if a CEO has an MBA degree and zero otherwise. Second, we test if CEOs who attended Ivy League institutions behave differently.[30] Third, we follow Benmelech and Frydman (2015) and construct a dummy variable, PHD, that takes the value of one if a CEO has a PhD and zero otherwise. Fourth, we control for a CEO's technical or financial educational background using the dummy variable FINTECH_EDUC, which takes the value of one if the CEO has an educational background in financial or technical areas following Benmelech and Frydman (2015).

In addition, we control for the CEO's military experience, as documented by Benmelech and Frydman (2015). We use a dummy variable, MILITARY, that takes the value of one if the CEO served in the military and zero otherwise. Finally, we include other CEO personal characteristics that could affect corporate innovation, such as DEPRESSION_CEO (which takes the value of one if the CEO was born in the period from 1920 to 1929), INVENTOR_CEO (which equals one if the CEO has his or her own patent), and FOREIGN_CEO (which equals one if the CEO was born outside the United States).[31] We rerun the baseline regression and add each of the above-mentioned CEO characteristics variables and report the regression estimates in

[30] Following Benmelech and Frydman (2015), we use a dummy variable IVY that equals one if the CEO attended one of eight Ivy League universities and zero otherwise. The eight Ivy League institutions are Brown University, Columbia University, Cornell University, Dartmouth College, Harvard University, the University of Pennsylvania, Princeton University, and Yale University.

[31] We define DEPRESSION_CEO following Malmendier and Tate (2005) and Malmendier and Nagel (2011).

Columns (1) to (8) of Table 7 (for the media awards sample) and Table 8 (for the non-media awards sample). In Column (9), we show the regression results when we include all eight control variables in our baseline regression.

[Please insert Table 7 here]

In Table 7, we find that, with regard to media awards, controlling for additional CEO characteristics does not change the results of the baseline regressions. The effects of winning media awards on patent and R&D spending remain insignificant in the year after the award year. However, winning media awards results in significantly fewer citations for award-winning CEO firms in the one year following the award year, compared to those firms led by predicted winners. The results are robust to controlling for several CEO characteristics. The results in Table 7 are consistent with previous findings.[32]

[Please insert Table 8 here]

In Table 8, the coefficients of NON_MEDIA are all statistically significant across all model specifications. Thus, the effect of winning a non-media award on corporate innovation is independent of the above-mentioned CEO characteristics. Regarding CEO characteristics, the results suggest that firms led by CEOs with a financial education, a Ph.D. degree, or their own

[32] We report the results for the two- and three-year period after the award year in the Internet Appendix (Section A and Tables A-1 and A-2) and find that, after controlling for CEOs' educational and demographic backgrounds, the coefficients for NON_MEDIA remain positive and significant while the coefficients for MEDIA are not significant across all model specifications.

patents tend to have more patents in each of the two years following the award year, whereas firms run by Depression era CEOs tend to achieve fewer patents during the same period.[33]

In order to make sure that our results are free from endogeneity concerns in the sense that it is the status change following CEO personal awards, not other CEO personal characteristics, that enhances corporate innovation, we conduct a subsample analysis. Specifically, we re-run our baseline model in Table 4 for two subsamples based on CEO tenure: a subsample with tenure less than or equal 3 years and a subsample of with tenure above 3 years. We argue that, if other CEO personal attributes are the key drivers of corporate innovative activities, we should observe favorable impacts on innovation within the first three years of their appointment. In addition, if the status change following CEO personal awards is the key determinant of our documented results, we should continue to observe a significant relation between award-winning CEO and innovation success for a subsample with tenure of above 3 years. We report the results for this test in the Internet Appendix (Section A and Table A-3). The results in this appendix confirm that the effect of winning a non-media award on corporate innovation is independent of CEO characteristics.

B. Innovation Characteristics

As our focus is on the impact of CEO personal award on corporate innovation, we examine the influence CEOs have in setting the strategic goals of innovative activities of their firms. Following recent studies (e.g., Balsmeier, Fleming, Manso, 2017, Sunder et al., 2017; Custodio

[33] Our results are aligned with those of He and Hirshleifer (2017), who find that companies managed by CEOs with a PhD produce more patents, and Islam and Zein (2017), who document that high-tech firms led by CEOs with their own patent are associated with greater innovation outputs.

et al., 2017), we use two measures of innovation strategies. *First*, we construct a measure of originality of the patents filed by a firm, following Hall et al. (2011) and Chang et al. (2018). *Second*, we classify innovation strategies into exploratory and exploitative strategies, following Manso (2011), Balsmeier, Fleming, and Manso (2017), Custodio et al. (2017) and Chang et al. (2018).[34] We report the results for this test in the Internet Appendix (Section C, Table A-4). Results in this appendix suggest that firms, as induced by the status change following CEO personal non-media awards, significantly enhance the patent originality, decrease the fraction of exploitative patents, and increase the fraction of exploratory patents. In contrast, there is no significant difference in innovative strategies between media award-winning CEOs and a matched sample of non-winners (predicted winners). To the extent that patents with higher originality scores represent more impactful inventions and that exploratory patents are more risky and radical than exploitative patents, these results suggest that non-media award winning CEO are more willing to encourage innovation strategies that pursue exploratory activities and path-breaking innovations.

C. Other Robustness Checks

In this section, we check the robustness of our results and address the sample selection bias as well as the potential omitted variable bias associated with our results. The robustness tests results are reported in Table 9, which presents the coefficient estimates and *t*-statistics of the variables of interest, MEDIA and NON_MEDIA, in different specifications.

[Please insert Table 9 here]

[34] Exploitative innovations extend existing knowledge while exploratory innovations require new knowledge or a departure from existing knowledge.

First, we address the possible sample selection bias. As noted in the previous section, for our main analysis, we restrict our sample to awards granted to CEOs for their roles as a company leader and we exclude awards for personal achievement, as well as awards that are not likely to be selected based on firm performance, such as community awards. Since the awards granted to CEOs for their leadership roles can be predicted, at least partly, by past firm performance and CEO characteristics, this restriction allows us to better run the logit models and construct a matched sample of award winners. More importantly, we exclude awards granted to CEOs based on their services/contributions to the community because these awards are not necessarily related to their managerial talent or competence as the head of a corporation.[35] Therefore, excluding these awards improves the effectiveness of our prediction model.

To ensure that our core results still hold, even after considering a larger (but noisier) sample, in the first test, we repeat our tests using a full sample of CEO personal awards. Specifically, we first run the logit models to predict awards. We then use the predicted values from the logit regression to construct the nearest-neighbor matched sample for the award winners. We test the differences in firm and CEO characteristics after the matching to confirm its validity. We then test for differences in innovation outputs across award winners and non-winners using a regression framework. We find that our core results hold for different sample selections. According to Row (1) in Table 9, the coefficients of MEDIA are only significant for $PATENT_{t+1}$, $PATENT_{t+2}$ and $CITATION_{t+2}$ and are statistically insignificant across other model specifications. The coefficients of NON_MEDIA are statistically significant for patents at the

[35] We find that a considerable number of CEOs in our sample were awarded social awards because of their own donations and charity services to the community.

5% level for each of the two years following the award year and then become weaker in the third year following the award year. The level of significance in these subtests is reduced when a noisy sample is taken into consideration, which further confirms the validity of our logit models. By considering a broad (and noisy) sample of various award types and still having our core results hold, we can rule out the possibility of our results being driven by sample selection bias.

Second, we exclude the last two years from the sample to ensure that our results are not subject to potential truncation bias. We report the results of this test in Row (2) of Panel A and Row (2) of Panel B of Table 9. The results show that excluding the years 2009 and 2010 does not change our main findings.

Third, to show that our results are not subject to the inclusion of prestigious awards as in Malmendier and Tate's (2009) sample, for media awards (Panel A of Table 9), we run two robustness tests. In the first, reported in Row (3a), we only consider the awards considered by Malmendier and Tate (2009) in our media awards sample. In the second test, reported in Row (3b), we exclude those awards of Malmendier and Tate's (2009) sample from our sample. We find that the negative effect of winning a media award on the number of citations becomes insignificant when different award samples are considered. Regarding non-media awards (Panel B), we exclude awards granted by Ernst & Young, because, in our setting, we consider Ernst & Young awards non-media awards. However, this award is included in the prestigious awards list of Malmendier and Tate (2009). Therefore, we exclude awards granted by Ernst & Young to avoid the possible effect of outliers. We report the regression estimates of this test in Row (3) of Panel B. The results show that our baseline results remain robust after excluding awards from Ernst & Young.

Fourth, one issue with the patent data is that many firms do not produce any patents. Therefore, we investigate whether our baseline results are driven by the numerous firms that choose not to innovate. Specifically, we exclude firms that have never had any patents and repeat the analyses. The results of this robustness check, reported in Row (4) of Panel A of Table 9 for the media award sample, show that the coefficient of MEDIA on the number of citations is insignificant in the year after the award year. Its significant level is weaker in the second year after the award year (at the 10% level). Regarding the results for the non-media award sample, according to Row (4) of Panel B, the coefficients of NON_MEDIA remain largely positive and significant, consistent with the baseline results.

Fifth, we control for CEO incentives, as measured by the stock option delta and vega, following Core and Guay (2002) and Coles, Daniel and Naveen (2006).[36] The variable DELTA measures the sensitivity of CEO stock options to a change in the value of the underlying stock, while VEGA measures the sensitivity of CEO stock options to the underlying volatility. It is possible for CEO incentives to drive our results. Nevertheless, the results from Row (5) of Panels A and B indicate that our results are largely unchanged after controlling for CEO incentives.

Sixth, we control for stock liquidity, since Fang et al. (2014) show that stock liquidity matters in corporate innovative activities. The results of this robustness check, reported in Row (6) of Panels A and B, show that the effect of winning CEO awards (either media or non-media ones) on innovation activity is largely independent of the effect of stock liquidity on innovation.

[36] We thank Lalitha Naveen for making the data available on her website at https://sites.temple.edu/lnaveen/data.

Seventh, we control for CEOs' general managerial skills, since Custodio et al. (2013, 2017) find that firms led by CEOs with greater general managerial skills perform better and are more innovative. We find this additional control variable does not alter our results.

Eighth, institutional ownership is positively associated with innovation (Aghion et al., 2013). Therefore, we control for institutional ownership in Row (8) of Panels A and Panel B. We find that including institutional ownership as an additional control variable does not materially change our baseline results.

Finally, we consider controlling for the corporate governance index (G_INDEX) of Gompers, Ishii and Metrick (2003), since O'Connor and Rafferty (2012) document a positive relation between governance and innovative activity. According to Row (9) of Panel A, the coefficients of MEDIA become insignificant after we control for G_INDEX. With regard to non-media awards, including G_INDEX reduces the persistence of the effect of winning non-media awards on corporate innovation. Specifically, as suggested by the results in Row (9) of Panel B, non-media award-winning CEO firms only have better innovation output than their predicted winners in the first year after the award year. The effect disappears in the second and third years following the award year, after controlling for G_INDEX.

Overall, the results of our robustness checks suggest that the effect of winning media awards on corporate innovation is rather weak or insignificant and is sensitive to sample selection bias. In contrast, the effect of winning non-media awards on corporate innovation in the first year following the award year is strongly significant and robust. However, the longer-term effect of winning non-media awards becomes weaker in some of the robustness checks. We find this finding consistent with Malmendier and Tate (2009) and Wade et al. (2006), who suggest

that the status effect of winning an award is only strong in the short period following the award announcement.

IX. Conclusion

This study builds on previous literature on the effects that award-winning CEOs have on corporate performance. Whereas previous studies look at the impact on stock returns and operating performance, our study investigates the impact on corporate innovation. We also extend the previous literature by looking at not only media awards but also non-media awards. We find that the difference in corporate innovation outputs between media award-winning CEOs and a matched sample of non-winners (predicted winners) is either insignificant or weak. Contrary to this result, we find that firms headed by winners of non-media awards generate more patents and more citations per patent in the year following the award year.

Our finding that firms led by non-media award winners appear to generate more corporate innovation outputs is consistent with the view that non-media awards are a less biased (and hence better) proxy for personal competence and managerial ability. In addition, firms headed by winners of non-media award are also associated with better employee treatment and less analyst-induced pressure following the award, both of which spur innovative activities. Furthermore, induced by the status change following CEO personal awards, firms led by non-media award winners can benefit from the CEOs' reputation and networking to attract the best talent and enjoy more favorable business commitments for risky projects, which makes investments in innovation more manageable and eventually boosts the innovative activities of firms with non-media award-winning CEOs. Non-media award winners are less likely to be the center of media attention; hence they do not suffer from the burden of celebrity.

The broader contribution of this study is that it is the first to utilize a unique set of CEOs' non-media awards in examining firm innovation outcomes. The change in status following non-media award competitions could affect various corporate decisions and stakeholder behaviors. The findings of this study provide a potentially fruitful avenue for future research that investigates stakeholders and corporate outcomes in a non-media setting.

References

Aghion, P., Van Reenen, J., and Zingales, L. "Innovation and Institutional Ownership." *The American Economic Review*, 103 (2013), 277-304.

Amihud, Y. "Illiquidity and Stock Returns: Cross-Section and Time-Series Effects." *Journal of Financial Markets*, 5 (2002), 31-56.

Ammann, M., Horsch, P., and Oesch, D. "Competing with Superstars." *Management Science*, 6 (2016), 2842-2858.

Baik, B., Farber, D. B., and Lee, S. S. "CEO Ability and Management Earnings Forecasts." *Contemporary Accounting Research*, 28 (2011), 1645-1668.

Bae, K. H., Kang, J. K., and Wang, J. "Employee Treatment and Firm Leverage: A Test of the Stakeholder Theory of Capital Structure." *Journal of Financial Economics*, 100(1) (2011), 130-153.

Balsmeier, B., Fleming, L., and Manso, G. "Independent Boards and Innovation". *Journal of Financial Economics*, 123(3) (2017), 536-557.

Belenzon, S., and Berkovitz, T. "Innovation in Business Groups." *Management Science*, 56 (2010), 519-535.

Benmelech, E., and Frydman, C. "Military CEOs." *Journal of Financial Economics*, 117 (2015), 43-59.

Bennedsen, M., Perez-Gonzalez, F., and Wolfenzon, D. "Do CEOs Matter? Evidence from CEO Hospitalization Events." *The Journal of Finance*, forthcoming, (2018).

Bernile, G., Bhagwat, V., and Rau, P. R. "What Doesn't Kill You Will Only Make You More Risk-Loving: Early-Life Disasters and CEO Behavior." *The Journal of Finance*, 72 (2016), 167-206.

Bertrand, M., and Schoar, A. "Managing with Style: The Effect of Managers on Firm Policies." *The Quarterly Journal of Economics*, 118 (2003), 1169-1208.

Bhushan, R. "Firm Characteristics and Analyst Following". *Journal of Accounting and Economics*, 11(2-3) (1989), 255-274.

Blankespoor, E., and DeHaan, E. "CEO Visibility: Are Media Stars Born or Made?" Working Paper, Rock Center for Corporate Governance at Stanford University, (2015).

Brown, L. D., Call, A. C., Clement, M. B., and Sharp, N. Y. "Inside the "Black Box" of Sell-Side Financial Analysts". *Journal of Accounting Research*, 53(1) (2015), 1-47.

Chang, X., Y. Chen, S. Q. Wang, K. Zhang, and W. Zhang. "Credit default swaps and corporate innovation." *Journal of Financial Economics*, forthcoming (2018).

Chang, X., Fu, K., Low, A., and Zhang, W. "Non-Executive Employee Stock Options and Corporate Innovation." *Journal of Financial Economics*, 115 (2015), 168-188.

Chemmanur, T.J., and Tian, X. "Do Anti-Takeover Provisions Spur Corporate Innovation? A Regression Discontinuity Analysis". *Journal of Financial and Quantitative Analysis*, forthcoming, (2018).

Chen, C., Chen, Y., Hsu, P.-H., and Podolski, E. J. "Be Nice to Your Innovators: Employee Treatment and Corporate Innovation Performance." *Journal of Corporate Finance*, 39 (2016), 78-98.

Chen, Y., Podolski, E. J., Rhee, S. G., and Veeraraghavan, M. "Local Gambling Preferences and Corporate Innovative Success". *Journal of Financial and Quantitative Analysis*, 49(1) (2014), 77-106.

Chen, Y., Podolski, E. J., and Veeraraghavan, M. "Does Managerial Ability Facilitate Corporate Innovative Success?" *Journal of Empirical Finance*, 34 (2015), 313-326.

Chen, J., Leung, W. S., and Evans, K. P. "Are Employee-friendly Workplaces Conducive to Innovation?". *Journal of Corporate Finance*, 40 (2016), 61-79.

Cohen, L., Gurun, U., and Kominers, S. D. "Shielded Innovation." Working Paper, Havard Business School, (2016).

Cohen, L., Gurun, U., and Kominers, S. D. "Patent Trolls: Evidence from Targeted Firms." Working Paper, Havard Business School, (2017).

Coles, J. L., Daniel, N. D., and Naveen, L. "Managerial Incentives and Risk-Taking." *Journal of Financial Economics*, 79 (2006), 431-468.

Core, J., and Guay, W. "Estimating the Value of Employee Stock Option Portfolios and Their Sensitivities to Price and Volatility." *Journal of Accounting Research*, 40 (2002), 613-630.
Cornaggia, J., Mao, Y., Tian, X., and Wolfe, B. "Does Banking Competition Affect Innovation?" *Journal of Financial Economics*, 115 (2015), 189-209.
Cronqvist, H., Makhija, A. K., and Yonker, S. E. "Behavioral Consistency in Corporate Finance: CEO Personal and Corporate Leverage." *Journal of Financial Economics*, 103 (2012), 20-40.
Cronqvist, H., and Yu, F. "Shaped by Their Daughters: Executives, Female Socialization, and Corporate Social Responsibility." *Journal of Financial Economics*, 126 (2017), 543-562.
Custodio, C., Ferreira, M. A., and Matos, P. P. "Generalists Versus Specialists: Lifetime Work Experience and Chief Executive Officer Pay." *Journal of Financial Economics*, 108 (2013), 471-492.
Custodio, C., Ferreira, M. A., and Matos, P. P. "Do General Managerial Skills Spur Innovation?" *Management Science*, forthcoming, (2017).
Demerjian, P. R., Lev, B., Lewis, M. F., and McVay, S. E. "Managerial Ability and Earnings Quality." *The Accounting Review*, 88 (2012), 463-498.
Dittmar, A., and Duchin, R. "Looking in the Rearview Mirror: The Effect of Managers' Professional Experience on Corporate Financial Policy." *The Review of Financial Studies*, 29 (2015), 565-602.
Duchin, R., and Sosyura, D. "Divisional Managers and Internal Capital Markets." *The Journal of Finance*, 68 (2013), 387-429.
Edmans, A. "Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices." *Journal of Financial Economics*, 101(3) (2011), 621-640.
Ertugrul, M. "Employee-friendly Acquirers and Acquisition Performance". *Journal of Financial Research*, 36(3) (2013), 347-370.
Falato, A., Kadyrzhanova, D., and Lel, U. "Distracted Directors: Does Board Busyness Hurt Shareholder Value?" *Journal of Financial Economics*, 113 (2014), 404-426.
Faleye, O., Kovacs, T., and Venkateswaran, A. "Do Better-Connected CEOs Innovate More?" *Journal of Financial and Quantitative Analysis*, 49 (2014), 1201-1225.
Faleye, O., and Trahan, E. A. "Labor-friendly Corporate Practices: Is What is Good for Employees Good for Shareholders?". *Journal of Business Ethics*, 101(1) (2011), 1-27.
Fang, V.W., Tian, X., and Tice, S. "Does Stock Liquidity Enhance or Impede Firm Innovation?" *The Journal of Finance*, 69 (2014), 2085-2125.
Fombrun, C. J. "Reputation: Realizing Value from the Corporate Image." Harvard Business School Press (1996).
Frankel, R., Kothari, S. P., and Weber, J. "Determinants of the Informativeness of Analyst Research". *Journal of Accounting and Economics*, 41(1-2) (2006), 29-54.
Galasso, A., and Simcoe, T. S. "CEO Overconfidence and Innovation." *Management Science*, 57 (2011), 1469-1484.
Galbraith, C. S. "Divorce and the Financial Performance of Small Family Businesses: An Exploratory Study." *Journal of Small Business Management*, 41 (2003), 296-309.
Gao, H., Hsu, P.-H., Li, K., and Zhang, J. "The Real Effect of Smoking Bans: Evidence from Corporate Innovation." Working paper, The University of British Columbia, (2018).
Gao, H., and Zhang, W. "Employment Non-Discrimination Acts and Corporate Innovation." *Management Science*, 63 (2017), 2982-2999.
Gompers, P., Ishii, J., and Metrick, A. "Corporate Governance and Equity Prices." *The Quarterly Journal of Economics*, 118 (2003), 107-156.
Graffin, S. D., Wade, J. B., Porac, J. F., and McNamee, R. C. "The Impact of CEO Status Diffusion on the Economic Outcomes of Other Senior Managers." *Organization Science*, 19 (2008), 457-474.
Hall, B. H. "The Financing of Research and Development". *Oxford Review of Economic Policy*, 18 (1) 2002, 35-51.
Hall, B. H., Jaffe, A. B., and Trajtenberg, M. "The NBER Patent Citation Data File: Lessons, Insights and Methodological Tools." Working paper, National Bureau of Economic Research (2001).

Hall, B. H., Jaffe, A. B., and Trajtenberg, M. "Market Value and Patent Citations." *The RAND Journal of Economics*, 36 (2005), 16-38.
Hall, B. H., and Ziedonis, R. H. "The Patent Paradox Revisited: An Empirical Study of Patenting in the Us Semiconductor Industry, 1979-1995." *The RAND Journal of Economics*, (2001), 101-128.
He, Z., and Hirshleifer, D. "Managerial Scientific Expertise, Innovation, and Firm Performance." Working Paper, UC Irvine (2017).
He, J. J., and Tian, X. "The Dark Side of Analyst Coverage: The Case of Innovation". *Journal of Financial Economics*, 109(3) (2013), 856-878.
Herzberg, F., Mausner, B., and Snyderman, B. B. The Motivation to Work (2nd ed.). NewYork: John Wiley & Sons (1959).
Hirshleifer, D., Low, A., and Teoh, S. H. "Are Overconfident CEOs Better Innovators?" *The Journal of Finance*, 67 (2012), 1457-1498.
Holmstrom, B. "Agency Costs and Innovation." *Journal of Economic Behavior & Organization*, 12 (1989), 305-327.
Hsu, P.-H., Tian, X., and Xu, Y. "Financial Development and Innovation: Cross-Country Evidence." *Journal of Financial Economics*, 112 (2014), 116-135.
Huang, J., and Kisgen, D. J. "Gender and Corporate Finance: Are Male Executives Overconfident Relative to Female Executives?" *Journal of Financial Economics*, 108 (2013), 822-839.
Huang, S. X., Pereira, R., and Wang, C. "Analyst coverage and the likelihood of meeting or beating analyst earnings forecasts". *Contemporary Accounting Research*, 34(2) (2017), 871-899.
Islam, E., and Zein, J. "Inventor CEOs." Working paper, University of New South Wales (2017).
Jiao, Y. "Stakeholder Welfare and Firm Value." *Journal of Banking and Finance*, 34(10) (2010), 2549-2561.
Jensen, M. C., and Meckling, W. H. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics*, 3 (1976), 305-360.
Kogan, L., Papanikolaou, D., Seru, A., and Stoffman, N. "Technological Innovation, Resource Allocation, and Growth." *The Quarterly Journal of Economics*, 132 (2017), 665-712.
Lacey, N. "Media Institutions and Audiences: Key Concepts in Media Studies." Palgrave Macmillan, New York (2002).
Li, K., Griffin, D., Yue, H., and Zhao, L. "How Does Culture Influence Corporate Risk-Taking?" *Journal of Corporate Finance*, 23 (2013), 1-22.
Lu, J., and Wang, W. "Managerial Conservatism, Board Independence, and Corporate Innovation." *Journal of Corporate Finance*, 48 (2018), 1-16.
Malmendier, U., and Nagel, S. "Depression Babies: Do Macroeconomic Experiences Affect Risk-Taking?" *The Quarterly Journal of Economics*, 126 (2011), 373-416.
Malmendier, U., and Tate, G. "CEO Overconfidence and Corporate Investment." *The Journal of Finance*, 60 (2005), 2661-2700.
Malmendier, U., and Tate, G. "Superstar CEOs." *The Quarterly Journal of Economics*, 124 (2009), 1593-1638.
Malmendier, U., Tate, G., and Yan, J. "Overconfidence and Early-Life Experiences: The Effect of Managerial Traits on Corporate Financial Policies." *The Journal of Finance*, 66 (2011), 1687-1733.
Manso, G. (2011). "Motivating innovation". *The Journal of Finance*, 66(5),1823–1869.
Maslow, A. H. "A Theory of Human Motivation." *The Psychological Review*, 50(4) (1943), 370-396.
Masulis, R.W., and E.J. Zhang. "Preoccupied Independent Directors." ECGI Working Paper Series in Finance. *Journal of Financial Economics*, forthcoming, (2018)
Mohanram, P. S., and Sunder, S. V. "How has regulation FD affected the operations of financial analysts?". *Contemporary Accounting Research*, 23(2) (2006), 491-525.
Narayanan, M. "Managerial Incentives for Short-Term Results." *The Journal of Finance*, 40 (1985), 1469-1484.
Neyland, J. "Love or Money: The Effect of CEO Divorce on Firm Risk and Compensation." Working paper, The University of Melbourne (2016).

O'Brien, P. C., and Bhushan, R. "Analyst Following and Institutional Ownership". *Journal of Accounting Research,* (1990), 55-76.

O'Connor, M., and Rafferty, M. "Corporate Governance and Innovation." *Journal of Financial and Quantitative Analysis*, 47 (2012), 397-413.

PwC, "Demystifying Innovation: Take Down the Barriers to New Growth". URL https://www.pwc.com/gx/en/corporate-strategy-services/assets/ceosurvey-innovation.pdf (2011).

Sapra, H., Subramanian, A., and Subramanian, K.V. "Corporate Governance and Innovation: Theory and Evidence." *Journal of Financial and Quantitative Analysis*, 49 (2014), 957-1003.

Schilling, M.A., and Phelps, C. C. "Interfirm Collaboration Networks: The Impact of Large-Scale Network Structure on Firm Innovation." *Management Science*, 53 (2007), 1113-1126.

Schoar, A., and Zuo, L. "Shaped by Booms and Busts: How the Economy Impacts CEO Careers and Management Styles." *The Review of Financial Studies*, 30 (2017), 1425-1456.

Simsek, Z. "CEO Tenure and Organizational Performance: An Intervening Model." *Strategic Management Journal*, 28 (2007), 653-662.

Soltes, E. "Private Interaction between Firm Management and Sell-Side Analysts". *Journal of Accounting Research,* 52(1) (2014), 245-272.

Sunder, J., Sunder, S. V., and Zhang, J. "Pilot CEOs and Corporate Innovation." *Journal of Financial Economics*, 123 (2017), 209-224.

Verwijmeren, P., and Derwall, J. "Employee Well-being, Firm Leverage, and Bankruptcy Risk." *Journal of Banking and Finance*, 34(5) (2010), 956-964.

Wade, J. B., Porac, J. F., Pollock, T. G., and Graffin, S. D. "The Burden of Celebrity: The Impact of CEO Certification Contests on CEO Pay and Performance." *Academy of Management Journal*, 49 (2006), 643-660.

Zingales, L. "In Search of New Foundations." *The Journal of Finance,* 55(4) (2000), 1623-1653.

Table 1. Award information

This table presents the number of award winners by years and by the number of awards rewarded. Panel A reports award information for a sample of CEOs who received media awards. Panel B displays award information for a sample of CEOs who received non-media awards. CEOs who won both media and non-media awards are excluded. The winners are categorized into four groups: *Winners with 1 award* reports the number of CEOs who only won one award in a particular year; *Winners with 2 awards*, *Winners with 3 awards*, and *Winners with more than 3 awards* display the numbers of CEOs who received two, three, and more than three awards in a given year. Panel C presents award winners (media versus non-media) by gender, where media awards are defined as awards granted by media organizations and non-media awards are awards granted by non-media organizations. Data on CEOs' media and non-media awards were hand-collected from the CEOs' biographies in the Marquis Who's Who database.

Panel A: Number of winners—Media awards

Year	Winners with 1 award	Winners with 2 awards	Winners with 3 awards	Winners with more than 3 awards	Total winners	Total awards
1993	8	1	0	0	9	10
1994	10	0	0	0	10	10
1995	31	0	0	0	31	31
1996	9	0	1	0	10	12
1997	2	0	0	0	2	2
1998	7	0	0	0	7	7
1999	3	0	0	0	3	3
2000	3	0	0	0	3	3
2001	5	0	0	0	5	5
2002	6	1	0	0	7	8
2003	8	0	0	0	8	8
2004	6	2	0	0	8	10
2005	6	1	1	1	9	15
2006	11	0	1	0	12	14
2007	7	7	0	2	16	29
2008	15	6	1	2	24	38
2009	13	7	0	2	22	37
2010	15	9	1	1	26	40
Total	165	34	5	8	212	282

Panel B: Number of winners—Non-media awards

Year	Winners with 1 award	Winners with 2 awards	Winners with 3 awards	Winners with more than 3 awards	Total winners	Total awards
1993	4	0	0	0	4	4
1994	8	1	0	0	9	10
1995	6	2	0	0	8	10
1996	10	2	1	0	13	17
1997	7	3	0	0	10	13
1998	12	0	1	0	13	15

1999	8	2	0	0	10	12
2000	9	1	0	1	11	17
2001	21	1	0	0	22	23
2002	2	3	0	0	5	8
2003	10	2	0	0	12	14
2004	10	2	0	0	12	14
2005	8	1	0	0	9	10
2006	10	0	0	0	10	10
2007	8	2	0	0	10	12
2008	9	0	0	0	9	9
2009	15	0	0	0	15	15
2010	12	0	0	0	12	12
Total	169	22	2	1	194	225

Panel C: Number of winners by gender

Year	Media award winners			Non-media award winners		
	Male winners	Female winners	Total winners	Male winners	Female winners	Total winners
1993	9	0	9	4	0	4
1994	10	0	10	8	1	9
1995	31	0	31	8	0	8
1996	10	0	10	13	0	13
1997	2	0	2	10	0	10
1998	7	0	7	13	0	13
1999	3	0	3	10	0	10
2000	2	1	3	11	0	11
2001	4	1	5	21	1	22
2002	6	1	7	5	0	5
2003	7	1	8	11	1	12
2004	6	2	8	11	1	12
2005	6	3	9	9	0	9
2006	11	1	12	10	0	10
2007	12	4	16	10	0	10
2008	18	6	24	9	0	9
2009	17	5	22	13	2	15
2010	17	9	26	10	2	12
Total	178	34	212	186	9	194

Table 2. Summary statistics by firm

This table reports summary statistics for both firm and CEO characteristics. Panel A shows the results for media awards, while Panel B shows the results for non-media awards. The non-media awards are awards granted by non-media organizations. Data on CEOs' media and non-media awards are hand-collected from their biographies in the Marquis Who's Who database. In each panel, the winners (W) sample is based on all firms whose CEOs were winners of media awards (Panel A) or non-media awards (Panel B) in a particular year. The non-winners (N) sample consists of the remaining firms whose CEOs did not win any award in a given year. The predicted winners (P) are chosen from the non-winners (N) as those with propensity scores closest to those of each actual award winner (W). The propensity scores are constructed using predicted values from the logit model in Table 3. The matching procedure is carried out for each year t in which an award was conferred, with replacement. The variable PATENT is the logarithm of one plus the number of patents granted during the year and CITATION is the logarithm of one plus the number of citations summed across all patents applied for during the year. The numbers of patents and citations are obtained from Kogan et al. (2017) and are adjusted for truncation bias following Hall et al. (2001, 2005). The variable RD is the annual R&D expenditure scaled by the total book value of assets; $RETURN_{t-1}$ and $RETURN_{t-2}$ are the compound returns from the one and two years prior to the award year t, respectively; Size is the logarithm of the total book value of assets; TOBIN_Q is market value of equity plus total assets minus the book value of equity, all divided by total assets; LEVERAGE is the ratio of total debt to book assets; ROA is the ratio of operating income to book assets; and CASH is measured as cash and assets readily convertible to cash, scaled by book assets. Information on firm characteristics is obtained from the CRSP and Compustat. The variable CEO_AGE is the CEO age in years; CEO_TENURE is the number of years since the current CEO became CEO; and FEMALE is a dummy variable that equals one if the CEO is female and zero otherwise. Information on CEO age, tenure, and gender is obtained from ExecuComp. The variable MBA takes the value of one if the CEO has an MBA degree; IVY equals one if the CEO attended one of the Ivy League institutions, FINTECH_EDUC takes the value of one if the CEO has a technical or financial educational background; Military takes the value of one if the CEO served in the military, PhD equals one if the CEO has a PhD degree; DEPRESSION_CEO takes the value of one if the CEO was born in the period from 1920 to 1929; INVENTOR_CEO equals one if the CEO has his or her own patent; and FOREIGN_CEO equals one if the CEO was born outside the United States. Information on CEO educational and demographic backgrounds was obtained from the Marquis Who's Who. Variables with the subscript t - 1 are measured at the end of the year prior to the award year t. The column W−N shows the differences in means between award winners and non-winners and W−P shows the differences in means between award winners and predicted winners. The superscripts ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Winners (W)				**Non-winners (N)**				**Predicted winners (P)**				**Differences in mean**	
	Obs	Mean	Med	SD	Obs	Mean	Med	SD	Obs	Mean	Med	SD	W–N	W–P
Panel A: Media awards														
Matching variables														
RD_{t-1}	212	0.044	0.006	0.065	15,514	0.043	0.005	0.090	212	0.043	0.002	0.066	0.001	0.001
$RETURN_{t-1}$	212	0.203	0.120	0.515	15,514	0.169	0.087	0.725	212	0.239	0.148	0.765	0.034	-0.036
$RETURN_{t-2}$	212	0.191	0.000	0.673	15,514	0.169	0.000	0.884	212	0.183	0.016	0.644	0.021	0.007
$SIZE_{t-1}$	212	4.320	4.241	1.831	15,514	2.547	2.390	1.519	212	4.100	4.365	1.856	1.773***	0.220
$TOBIN\_Q_{t-1}$	212	1.053	1.056	0.029	15,514	1.039	1.040	0.031	212	1.050	1.053	0.029	0.014***	0.003
ROA_{t-1}	212	0.091	0.085	0.099	15,514	0.050	0.060	0.171	212	0.075	0.080	0.232	0.041***	0.016
$CASH_{t-1}$	212	0.187	0.116	0.183	15,514	0.154	0.078	0.179	212	0.194	0.117	0.204	0.033***	-0.008
CEO_AGE	212	67.156	66.000	10.593	15,514	67.819	68.000	9.370	212	66.241	66.000	10.815	-0.663	0.915

CEO TENURE	212	9.844	6.000	10.337	15,514	7.943	5.000	7.655	212	9.832	7.000	8.688	1.901***	0.012
FEMALE	212	0.160	0.000	0.368	15,514	0.018	0.000	0.132	212	0.110	0.000	0.314	0.143***	0.050
Other variables														
$PATENT_{t-1}$	201	2.157	1.158	2.397	14,236	1.150	0.000	1.691	201	2.106	0.693	2.559	1.007***	0.051
$CITATION_{t-1}$	201	1.413	0.000	1.572	14,236	0.999	0.000	1.404	201	1.377	0.985	1.478	0.414***	0.035
$LEVERAGE_{t-1}$	211	0.144	0.119	0.130	15,470	0.157	0.000	0.363	211	0.164	0.133	0.202	-0.035***	-0.020
MBA	212	0.236	0.000	0.426	15,514	0.121	0.000	0.326	212	0.209	0.000	0.408	0.079***	0.026
IVY	212	0.274	0.000	0.447	15,514	0.172	0.000	0.413	212	0.178	0.000	0.384	0.153***	0.096**
FINTECH_EDUC	212	0.250	0.000	0.434	15,514	0.047	0.000	0.212	212	0.215	0.000	0.412	0.078***	0.035
MILITARY	212	0.066	0.000	0.249	15,514	0.048	0.000	0.213	212	0.031	0.000	0.175	0.019	0.035
PHD	212	0.212	0.000	0.410	15,514	0.004	0.000	0.060	212	0.073	0.000	0.261	0.164***	0.139***
DEPRESSION_CEO	212	0.019	0.000	0.136	15,514	0.008	0.000	0.089	212	0.010	0.000	0.102	0.015***	0.008
INVENTOR_CEO	212	0.028	0.000	0.166	15,514	0.034	0.000	0.181	212	0.026	0.000	0.160	0.020***	0.002
FOREIGN_CEO	212	0.071	0.000	0.257	15,514	1.150	0.000	1.691	212	0.058	0.000	0.234	0.037***	0.013

Fama–French 12 industries

	Winners (W)			**Non-winners (N)**				**Predicted winners (P)**			
Consumer nondurables	15.09%	Business Equipment	29.72%	C. nond	9.00%	Bus. eq	22.24%	C. nond	7.33%	Bus. eq	32.98%
Consumer durables	1.42%	Shops	20.28%	C. dur	3.97%	Shops	15.13%	C. dur	3.14%	Shops	20.42%
Manufacturing	9.43%	Health	5.19%	Man.	17.18%	Health	10.58%	Man.	10.47%	Health	6.28%
Energy	4.25%	Other	12.26%	Energy	5.82%	Other	11.47%	Energy	6.28%	Other	9.42%
Chemicals	2.36%			Chem.	4.61%			Chem.	3.66%		

Panel B: Non-media awards

Matching variables														
RD_{t-1}	194	0.058	0.031	0.071	15,532	0.043	0.005	0.090	194	0.057	0.026	0.114	0.015**	0.091
$RETURN_{t-1}$	194	0.344	0.126	1.955	15,532	0.167	0.087	0.693	194	0.242	0.129	0.856	0.177***	0.000
$RETURN_{t-2}$	194	0.148	0.000	0.505	15,532	0.170	0.000	0.885	194	0.151	0.000	0.956	-0.022	0.005
$SIZE_{t-1}$	194	3.752	3.815	1.766	15,532	2.556	2.397	1.528	194	3.660	3.584	1.822	1.195***	0.009
$TOBIN\_Q_{t-1}$	194	1.047	1.048	0.028	15,532	1.039	1.040	0.031	194	1.046	1.047	0.028	0.008***	-0.007
ROA_{t-1}	194	0.069	0.067	0.100	15,488	0.051	0.060	0.171	194	0.064	0.070	0.145	0.019	0.186
$CASH_{t-1}$	194	0.146	0.071	0.163	15,532	0.154	0.079	0.180	194	0.137	0.086	0.144	-0.008	0.015
CEO_AGE	194	70.320	71.000	9.631	15,532	67.779	68.000	9.380	194	70.326	71.000	11.099	2.541***	0.091
CEO TENURE	194	10.113	7.000	9.770	15,532	7.942	5.000	7.667	194	9.927	5.000	11.099	2.172***	0.000
FEMALE	194	0.041	0.000	0.199	15,532	0.019	0.000	0.138	194	0.026	0.000	0.159	0.022**	0.005
Other variables														
$PATENT_{t-1}$	186	2.625	2.303	2.401	14,521	1.145	0.000	1.688	186	2.089	1.099	2.411	1.480***	0.537
$CITATION_{t-1}$	186	1.792	2.001	1.587	14,521	0.994	0.000	1.401	186	1.410	0.591	1.499	0.798***	0.382
$LEVERAGE_{t-1}$	193	0.170	0.138	0.158	15,532	0.179	0.153	0.179	193	0.155	0.130	0.136	-0.009	0.014
MBA	194	0.227	0.000	0.420	15,532	0.157	0.000	0.364	194	0.192	0.000	0.395	0.070***	0.035
IVY	194	0.216	0.000	0.413	15,532	0.121	0.000	0.327	194	0.202	0.000	0.403	0.095***	0.014
FINTECH_EDUC	194	0.345	0.000	0.477	15,532	0.171	0.000	0.412	194	0.218	0.000	0.414	0.174***	0.128***
MILITARY	194	0.072	0.000	0.259	15,532	0.047	0.000	0.212	194	0.052	0.000	0.222	0.025*	0.020
PHD	194	0.320	0.000	0.468	15,532	0.047	0.000	0.211	194	0.124	0.000	0.331	0.273***	0.195***

DEPRESSION_CEO	194	0.015	0.000	0.124	15,532	0.004	0.000	0.060	194	0.010	0.000	0.102	0.012***	0.005
INVENTOR_CEO	194	0.088	0.000	0.283	15,532	0.007	0.000	0.085	194	0.021	0.000	0.143	0.080***	0.067***
FOREIGN_CEO	194	0.113	0.000	0.318	15,532	0.033	0.000	0.179	194	0.052	0.000	0.222	0.080***	0.062**

Fama–French 12 industries

	Winners (W)			**Non-winners (N)**				**Predicted winners (P)**			
Consumer nondurables	4.64%	Business Equipment	39.69%	C. nond	9.14%	Bus. eq	22.12%	C. nond	6.74%	Bus. eq	33.16%
Consumer durables	2.06%	Shops	15.46%	C. dur	3.96%	Shops	15.19%	C. dur	8.81%	Shops	13.47%
Manufacturing	18.04%	Health	6.19%	Man.	17.07%	Health	10.57%	Man.	13.47%	Health	11.40%
Energy	2.58%	Other	6.70%	Energy	5.84%	Other	11.54%	Energy	3.11%	Other	7.77%
Chemicals	4.64%			Chem.	4.58%			Chem.	2.07%		

Table 3. Logit models to predict awards

Columns (1) and (2) report the results for the logit models that predict media and non-media award winners, respectively. The binary dependent variable equals one if the firm's CEO won an award in the current year and zero otherwise. The variables $RETURN_{t-1}$ and $RETURN_{t-2}$ are the compound returns from the one and two years prior to the award year, respectively; SIZE is the logarithm of the total book value of assets; RD is the annual R&D expenditure scaled by the total book value of assets; TOBIN_Q is market value of equity plus total assets minus the book value of equity, all divided by total assets; LEVERAGE is the ratio of total debt to book assets; ROA is the ratio of operating income to book assets; Cash is measured as cash and assets readily convertible to cash, scaled by book assets; IO is institutional ownership, computed as the fraction of outstanding common shares owned by all 13F reporting institutions; CEO_AGE is the CEO age in years; CEO_TENURE is the number of years since the current CEO became CEO; and FEMALE is a dummy variable that equals one if the CEO is female and zero otherwise. Variables with the subscript t - 1 are measured at the end of the year prior to the award year t. Industry dummies is the dummy for the two-digit Standard Industrial Classification (SIC) industry code. Industry and year dummies are not reported here for brevity. The *z*-statistics are reported in parentheses. The superscripts ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
	Media awards	**Non-media awards**
$RETURN_{t-1}$	0.182**	0.180***
	(2.45)	(2.65)
$RETURN_{t-2}$	0.141**	0.030
	(2.12)	(0.32)
$SIZE_{t-1}$	0.952***	0.576***
	(16.00)	(11.56)
$TOBIN\_Q_{t-1}$	29.338***	10.638***
	(7.12)	(3.12)
RD_{t-1}	0.013	1.008
	(0.01)	(1.12)
ROA_{t-1}	-0.548	0.064
	(-1.02)	(0.12)
$CASH_{t-1}$	2.248***	-0.484
	(3.83)	(-0.81)
CEO_AGE	-0.030***	0.018
	(-3.40)	(1.55)
CEO_TENURE	0.050***	0.036***
	(5.43)	(3.77)
FEMALE	3.088***	1.653***
	(11.46)	(4.18)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
No. of obs.	14,964	14,620
Pseudo-R^2	0.315	0.131

Table 4. Impact of winning CEO awards on innovation

This table reports the regression results for the sample that includes winners and predicted winners. Predicted winners (P) are chosen from the non-winners (N) as those with the propensity scores closest to those of each actual award winner (W). Panels A and B report the results for media and non-media awards, respectively. Columns (1) to (9) report the regression estimates for each ordinary least squares (OLS) regression with different dependent variables. The dependent variables are PATENT, CITATION, and RD, where PATENT is the logarithm of one plus the number of patents applied for during the year and CITATION is the logarithm of one plus the number of citations per patent. The numbers of patents and citations are obtained from Kogan et al. (2017) and are adjusted for truncation bias following Hall et al. (2001, 2005). The variable RD is the annual R&D expenditure scaled by the total book value of assets, t is the award year, and t + 1, t + 2, and t + 3 represent one, two, and three years after the award year t, respectively. The independent variables include MEDIA (a dummy variable equal to one if the CEO won at least one media award in year t and zero otherwise); NON_MEDIA (a dummy variable equal to one if the CEO won at least one non-media award in year t and zero otherwise); $RETURN_{t-1}$ and $RETURN_{t-2}$ (the compound returns from one and two years prior to the award year t, respectively); SIZE (the logarithm of the total book value of assets); RD_{t-1} (the previous year's annual R&D expenditure scaled by the total book value of assets); TOBIN_Q (market value of equity plus total assets minus the book value of equity, all divided by total assets); LEVERAGE (the ratio of total debt to book assets); ROA (the ratio of operating income to book assets); Cash (measured as cash and assets readily convertible to cash, scaled by book assets); CEO_AGE (the age of CEOs in years); CEO_TENURE (the number of years since the current CEO became CEO), and FEMALE (a dummy variable that equals one if the CEO is female and zero otherwise); and Industry dummies is the dummy for the two-digit SIC industry code. Industry and year dummies are not reported here for brevity. The *t*-statistics are reported in parentheses. The superscripts ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Media awards

	1 year after the award year			**2 years after the award year**			**3 years after the award year**		
	(1) $PATENT_{t+1}$	(2) $CITATION_{t+1}$	(3) RD_{t+1}	(4) $PATENT_{t+2}$	(5) $CITATION_{t+2}$	(6) RD_{t+2}	(7) $PATENT_{t+3}$	(8) $CITATION_{t+3}$	(9) RD_{t+3}
MEDIA	-0.198	-0.211**	-0.003	-0.179	-0.256**	-0.004	-0.105	-0.064	0.001
	(-1.310)	(-2.217)	(-0.658)	(-1.225)	(-2.532)	(-0.978)	(-0.750)	(-0.703)	(0.246)
$RETURN_{t-1}$	0.112	0.086	0.009**	0.137	0.178**	0.008**	0.065	-0.058	0.003
	(0.843)	(1.028)	(2.154)	(1.055)	(1.986)	(2.270)	(0.506)	(-0.693)	(1.132)
$RETURN_{t-2}$	0.176	0.106	0.002	0.168	0.201**	0.005	0.059	0.106	0.005*
	(1.309)	(1.245)	(0.520)	(1.315)	(2.274)	(1.404)	(0.488)	(1.352)	(1.700)
$SIZE_{t-1}$	0.601***	0.231***	-0.000	0.487***	0.217***	-0.002	0.418***	0.203***	-0.002
	(9.672)	(5.893)	(-0.006)	(7.949)	(5.136)	(-1.155)	(7.277)	(5.420)	(-1.122)
$TOBIN\_Q_{t-1}$	3.441	6.041**	0.171	-2.372	2.383	0.080	-0.821	4.631*	-0.018
	(0.812)	(2.259)	(1.315)	(-0.591)	(0.859)	(0.766)	(-0.210)	(1.823)	(-0.192)
RD_{t-1}	8.411***	4.449***	0.762***	9.494***	5.111***	0.712***	8.120***	3.992***	0.747***
	(5.008)	(4.198)	(14.815)	(5.809)	(4.524)	(16.843)	(5.355)	(4.040)	(20.830)
$LEVERAGE_{t-1}$	0.203	0.675	-0.004	0.341	0.168	0.022	-0.592	0.061	-0.006
	(0.275)	(1.453)	(-0.188)	(0.545)	(0.389)	(1.357)	(-0.852)	(0.136)	(-0.383)

ROA_{t-1}	-0.311	-0.863**	-0.022	1.507**	0.542	0.015	0.502	-0.203	0.002
	(-0.535)	(-2.353)	(-1.209)	(2.088)	(1.087)	(0.778)	(0.953)	(-0.590)	(0.145)
$CASH_{t-1}$	-0.787	0.455	0.028	-0.581	-0.128	0.027*	-0.927*	-0.589	0.015
	(-1.245)	(1.140)	(1.444)	(-0.951)	(-0.303)	(1.695)	(-1.660)	(-1.619)	(1.174)
CEO_AGE	-0.004	-0.010	0.000	0.003	0.002	-0.000	-0.002	-0.017**	0.000
	(-0.369)	(-1.291)	(0.071)	(0.259)	(0.305)	(-0.330)	(-0.206)	(-2.425)	(0.680)
CEO_TENURE	-0.019*	0.006	-0.000	-0.025**	-0.005	-0.000	-0.015	0.007	-0.000
	(-1.880)	(0.865)	(-0.429)	(-2.521)	(-0.662)	(-0.807)	(-1.604)	(1.111)	(-0.626)
FEMALE	0.596**	0.603***	-0.004	0.598**	0.583***	-0.001	0.493*	0.449***	0.002
	(2.108)	(3.380)	(-0.500)	(2.158)	(3.043)	(-0.148)	(1.927)	(2.692)	(0.320)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	367	367	367	354	354	354	357	357	356
Adjusted R^2	0.675	0.669	0.674	0.699	0.619	0.736	0.698	0.672	0.785

Panel B: Non-media awards

	1 year after the award year			**2 years after the award year**			**3 years after the award year**		
	(1) $PATENT_{t+1}$	(2) $CITATION_{t+1}$	(3) RD_{t+1}	(4) $PATENT_{t+2}$	(5) $CITATION_{t+2}$	(6) RD_{t+2}	(7) $PATENT_{t+3}$	(8) $CITATION_{t+3}$	(9) RD_{t+3}
NON_MEDIA	0.538***	0.354***	0.002	0.536***	0.406***	0.006	0.479***	0.319***	0.004
	(3.340)	(3.467)	(0.386)	(3.165)	(3.839)	(1.502)	(2.824)	(3.241)	(0.825)
$RETURN_{t-1}$	0.017	0.017	-0.001	0.028	-0.001	-0.002	0.052	0.018	-0.001
	(0.298)	(0.475)	(-0.472)	(0.496)	(-0.021)	(-1.172)	(0.932)	(0.540)	(-0.390)
$RETURN_{t-2}$	0.141	0.065	-0.002	0.121	0.074	-0.000	0.131	0.044	-0.000
	(1.307)	(0.959)	(-0.552)	(1.112)	(1.078)	(-0.142)	(1.217)	(0.711)	(-0.128)
$SIZE_{t-1}$	0.666***	0.251***	0.001	0.608***	0.189***	0.002	0.560***	0.132***	0.003
	(10.911)	(6.491)	(0.364)	(9.808)	(4.871)	(1.574)	(8.876)	(3.613)	(1.529)
$TOBIN\_Q_{t-1}$	3.393	3.770	-0.166	-1.462	-1.393	-0.144	-5.176	4.273	-0.065
	(0.777)	(1.365)	(-1.185)	(-0.318)	(-0.486)	(-1.317)	(-1.123)	(1.597)	(-0.537)
RD_{t-1}	2.692**	1.827**	0.321***	4.452***	2.448***	0.261***	5.867***	1.998***	0.236***
	(2.067)	(2.218)	(7.689)	(3.459)	(3.046)	(8.533)	(4.459)	(2.616)	(6.811)
$LEVERAGE_{t-1}$	-1.625**	0.250	-0.029	-1.069	0.027	-0.027	-0.473	0.001	-0.004
	(-2.200)	(0.536)	(-1.224)	(-1.323)	(0.054)	(-1.424)	(-0.605)	(0.003)	(-0.176)
ROA_{t-1}	-0.541	0.849	0.106***	0.694	0.926	0.085***	2.682***	0.670	0.076**
	(-0.511)	(1.267)	(3.121)	(0.693)	(1.483)	(3.584)	(2.603)	(1.121)	(2.808)
$CASH_{t-1}$	0.100	0.626	0.103***	0.554	1.361***	0.094***	0.486	0.509	0.107***

	(0.133)	(1.319)	(4.295)	(0.704)	(2.768)	(5.022)	(0.606)	(1.093)	(5.048)
CEO_AGE	0.012	-0.009	-0.001	0.027**	0.007	-0.000	0.025*	0.006	-0.000
	(0.902)	(-1.097)	(-1.280)	(2.104)	(0.805)	(-1.244)	(1.953)	(0.855)	(-0.308)
CEO_TENURE	-0.019*	0.009	-0.000	-0.028**	-0.003	0.000	-0.032***	-0.012*	-0.000
	(-1.669)	(1.296)	(-0.940)	(-2.453)	(-0.345)	(0.215)	(-2.738)	(-1.711)	(-0.043)
FEMALE	1.260***	0.498	0.026*	0.661	0.244	0.051***	2.192***	0.409	0.033*
	(2.635)	(1.646)	(1.697)	(1.236)	(0.731)	(4.020)	(3.167)	(1.019)	(1.809)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	347	347	347	330	330	330	316	316	316
Adjusted R^2	0.666	0.610	0.513	0.678	0.587	0.625	0.684	0.615	0.557

Table 5. Impact of winning CEO awards on employee treatment

This table reports the regression results for the sample that includes winners and predicted winners. Predicted winners (P) are chosen from the non-winners (N) as those with the propensity scores closest to those of each actual award winner (W). Panels A and B report the results for non-media and media awards, respectively. The dependent variables are RELATION_SCORE, where RELATION_SCORE is employee relations score constructed based on the KLD database. The independent variables include MEDIA (a dummy variable equal to one if the CEO won at least one media award in year t and zero otherwise); NON_MEDIA (a dummy variable equal to one if the CEO won at least one non-media award in year t and zero otherwise); $RETURN_{t-1}$ and $RETURN_{t-2}$ (the compound returns from one and two years prior to the award year t, respectively); SIZE (the logarithm of the total book value of assets); TOBIN_Q (market value of equity plus total assets minus the book value of equity, all divided by total assets); RD_{t-1} (the previous year's annual R&D expenditure scaled by the total book value of assets); LEVERAGE (the ratio of total debt to book assets); ROA (the ratio of operating income to book assets); and Industry dummies is the dummy for the two-digit SIC industry code. Industry and year dummies are not reported here for brevity. The *t*-statistics are reported in parentheses. The superscripts ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	1 year after the award year	**2 years after the award year**	**3 years after the award year**
	$RELATION\_SCORE_{t+1}$	$RELATION\_SCORE_{t+2}$	$RELATION\_SCORE_{t+3}$
Panel A: Non-media Awards			
NON_MEDIA	0.332*	0.343**	0.174
	(1.873)	(2.379)	(1.204)
$RETURN_{t-1}$	-0.097	-0.022	0.298
	(-0.311)	(-0.083)	(1.246)
$RETURN_{t-2}$	0.153	-0.067	-0.074
	(0.489)	(-1.010)	(-1.206)
$SIZE_{t-1}$	0.328***	0.309***	0.319***
	(5.447)	(5.091)	(5.598)
$TOBIN\_Q_{t-1}$	-0.018	-0.001	0.004
	(-0.598)	(-0.026)	(0.169)
RD_{t-1}	0.579	1.391	2.523
	(0.395)	(1.063)	(1.542)
$LEVERAGE_{t-1}$	1.206	1.323*	1.028*
	(1.335)	(1.793)	(1.789)
ROA_{t-1}	-0.211	0.632	-0.050
	(-0.191)	(0.771)	(-0.070)
$CASH_{t-1}$	0.482	0.336	0.235
	(0.577)	(0.396)	(0.304)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
No. of obs.	99	110	116
Adjusted R^2	0.339	0.320	0.335
Panel B: Media Awards			
MEDIA	-0.172	-0.146	0.014
	(-1.217)	(-0.744)	(0.068)
$RETURN_{t-1}$	0.000	-0.072	0.072
	(0.000)	(-0.304)	(0.281)
$RETURN_{t-2}$	-0.012	0.286	0.264

	(-0.056)	(0.719)	(0.576)
$SIZE_{t-1}$	0.201***	0.243***	0.391***
	(3.879)	(3.175)	(3.960)
$TOBIN\_Q_{t-1}$	0.002	0.004	-0.004
	(0.168)	(0.228)	(-0.381)
RD_{t-1}	3.513*	2.574	2.062
	(1.786)	(0.974)	(1.034)
$LEVERAGE_{t-1}$	-0.888	-0.769	-0.090
	(-1.151)	(-0.705)	(-0.075)
ROA_{t-1}	0.129	-0.770	-0.935
	(0.183)	(-0.445)	(-1.022)
$CASH_{t-1}$	-0.249	0.613	0.189
	(-0.403)	(0.729)	(0.234)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
No. of obs.	133	93	77
Adjusted R^2	0.373	0.315	0.302

Table 6. Impact of winning CEO awards on analyst coverage

This table reports the regression results for the sample that includes winners and predicted winners. Predicted winners (P) are chosen from the non-winners (N) as those with the propensity scores closest to those of each actual award winner (W). Panels A and B report the results for non-media and media awards, respectively. The dependent variables are ANALYST_COV, where ANALYST_COV is average number of analysts following the firm over the year, obtained from the Institutional Brokers Estimate Systems (I/B/E/S) database. The independent variables include MEDIA (a dummy variable equal to one if the CEO won at least one media award in year t and zero otherwise); NON_MEDIA (a dummy variable equal to one if the CEO won at least one non-media award in year t and zero otherwise); $RETURN_{t-1}$ and $RETURN_{t-2}$ (the compound returns from one and two years prior to the award year t, respectively); SIZE (the logarithm of the total book value of assets); TOBIN_Q (market value of equity plus total assets minus the book value of equity, all divided by total assets); RD_{t-1} (the previous year's annual R&D expenditure scaled by the total book value of assets); LEVERAGE (the ratio of total debt to book assets); ROA (the ratio of operating income to book assets); and Industry dummies is the dummy for the two-digit SIC industry code. Industry and year dummies are not reported here for brevity. The *t*-statistics are reported in parentheses. The superscripts ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	1 year after the award year	**2 years after the award year**	**3 years after the award year**
	$ANALYST\_COV_{t+1}$	$ANALYST\_COV_{t+2}$	$ANALYST\_COV_{t+3}$
Panel A: Non-media Awards			
NON_MEDIA	0.695	0.705	0.528
	(1.172)	(1.166)	(0.803)
$RETURN_{t-1}$	0.236	0.185	0.223
	(1.167)	(0.909)	(1.020)
$RETURN_{t-2}$	-0.207	-0.168	0.080
	(-0.539)	(-0.436)	(0.193)
$SIZE_{t-1}$	3.474***	3.592***	3.492***
	(16.970)	(17.287)	(15.486)
$TOBIN\_Q_{t\ t-1}$	0.031	0.033	0.016
	(0.799)	(0.844)	(0.372)
RD_{t-1}	28.677***	29.763**	29.841***
	(5.385)	(5.495)	(4.597)
$LEVERAGE_{t-1}$	-5.324**	-2.419	-1.808
	(-2.401)	(-1.066)	(-0.736)
ROA_{t-1}	11.736***	13.296***	14.371***
	(4.420)	(4.975)	(4.897)
$CASH_{t-1}$	9.872***	12.106***	12.173***
	(3.745)	(4.473)	(4.069)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
No. of obs.	376	364	355
Adjusted R^2	0.588	0.620	0.568
Panel B: Media Awards			
MEDIA	2.080***	2.421***	2.499***
	(3.010)	(3.250)	(3.152)
$RETURN_{t-1}$	1.176**	1.534**	1.515**
	(2.069)	(2.503)	(2.342)
$RETURN_{t-2}$	0.857	0.879	1.620**

	(1.467)	(1.406)	(2.471)
$SIZE_{t-1}$	3.896***	3.834***	3.784***
	(14.748)	(13.594)	(12.546)
$TOBIN\_Q_{t-1}$	0.218***	0.174***	0.192***
	(4.343)	(3.145)	(3.298)
RD_{t-1}	29.444***	27.164***	17.023*
	(3.537)	(3.048)	(1.792)
$LEVERAGE_{t-1}$	-7.441**	-5.590	-5.971
	(-2.028)	(-1.388)	(-1.405)
ROA_{t-1}	13.249***	14.384***	13.489***
	(4.403)	(4.480)	(4.000)
$CASH_{t-1}$	7.866***	9.286***	9.759***
	(2.621)	(2.864)	(2.815)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
No. of obs.	417	408	398
Adjusted R^2	0.562	0.534	0.505

Table 7. Controlling for CEO characteristics—Media awards

This table reports the regression results for the sample that includes media winners and predicted winners. Predicted winners (P) are chosen from the non-winners (N) as those with the propensity scores closest to those of each actual award winner (W). Panels A and B report the results when $PATENT_{t+1}$ or $CITATION_{t+1}$ is the dependent variable, respectively, where PATENT is the logarithm of one plus the number of patents applied for during the year and CITATION is the logarithm of one plus the number of citations per patent. The numbers of patents and citations are obtained from Kogan et al. (2017) and are adjusted for truncation bias following Hall et al. (2001, 2005). The year t is the award year and year t + 1 represents the year after the award year t. The independent variables include MEDIA (a dummy variable equal to one if the CEO won at least one media award in year t and zero otherwise) and a set of control variables for CEO and firm characteristics similar to those in Table 4 (not reported here for brevity). The column Main shows the results of the baseline regression (previously reported in Panel B of Table 4). Columns (1) to (9) have an additional dummy variable, including MBA (which takes the value of one if the CEO has an MBA degree), IVY (which equals one if the CEO attended one of the Ivy League institutions), FINTECH_EDUC (which takes the value of one if the CEO has a technical or financial educational background), MILITARY (which takes the value of one if the CEO served in the military), PHD (which equals one if the CEO has a PhD), DEPRESSION_CEO (which takes the value of one if the CEO was born in the period from 1920 to 1929), INVENTOR_CEO (which equals one if the CEO has his or her own patent), and FOREIGN_CEO (which equals one if the CEO was born outside the United States). Data for these nine additional variables are hand-collected from Marquis Who's Who. Industry is a dummy for the two-digit SIC industry code. The industry and year dummies are not reported here for brevity. The *t*-statistics are reported in parentheses. The superscripts ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Main	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Dependent variable *$PATENT_{T+1}$*										
MEDIA	-0.198	-0.187	-0.200	-0.217	-0.175	-0.207	-0.198	-0.198	-0.202	-0.182
	(-1.310)	(-1.236)	(-1.317)	(-1.445)	(-1.158)	(-1.346)	(-1.309)	(-1.305)	(-1.333)	(-1.181)
MBA		0.318								0.178
		(1.613)								(0.817)
IVY			0.040							-0.007
			(0.194)							(-0.033)
FINTECH_EDUC				0.476**						0.396*
				(2.510)						(1.846)
MILITARY					-0.913**					-0.818*
					(-2.177)					(-1.914)
PHD						0.081				-0.037
						(0.327)				(-0.139)
DEPRESSION_CEO							-1.382			-0.988
							(-1.168)			(-0.822)
INVENTOR_CEO								0.329		0.132
								(0.715)		(0.261)

FOREIGN_CEO									0.200	0.039
									(0.590)	(0.110)
CEO characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	347	347	347	347	347	347	347	347	347	347
Adjusted R^2	0.648	0.649	0.651	0.658	0.649	0.655	0.656	0.651	0.649	0.668

Panel B: Dependent variable *CITATION*$_{t+1}$										
MEDIA	-0.211**	-0.201**	-0.212**	-0.213**	-0.204**	-0.212**	-0.206**	-0.207**	-0.212**	-0.217**
	(-2.217)	(-2.113)	(-2.231)	(-2.247)	(-2.141)	(-2.189)	(-2.192)	(-2.171)	(-2.230)	(-2.245)
MBA		0.168								0.101
		(1.358)								(0.737)
IVY			0.147							0.140
			(1.123)							(1.028)
FINTECH_EDUC				0.167						0.113
				(1.393)						(0.840)
MILITARY					-0.098					0.045
					(-0.370)					(0.168)
PHD						0.044				-0.003
						(0.284)				(-0.020)
DEPRESSION_CEO							-1.945***			-2.025***
							(-2.643)			(-2.685)
INVENTOR_CEO								0.103		-0.045
								(0.355)		(-0.141)
FOREIGN_CEO									0.275	0.222
									(1.294)	(1.004)
CEO characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	347	347	347	347	347	347	347	347	347	347
Adjusted R^2	0.554	0.554	0.553	0.562	0.557	0.556	0.554	0.555	0.553	0.560

Table 8. Controls for CEO characteristics—Non-media awards

This table reports the regression results for the sample that includes non-media winners and predicted winners. Predicted winners (P) are chosen from the non-winners (N) as those with the propensity scores closest to those of each actual award winner (W). Panels A and B report the results when $PATENT_{t+1}$ or $CITATION_{t+1}$ is the dependent variable, respectively, where PATENT is the logarithm of one plus the number of patents applied for during the year and CITATION is the logarithm of one plus the number of citations per patent. The numbers of patents and citations are obtained from Kogan et al. (2017) and are adjusted for truncation bias following Hall et al. (2001, 2005). The year t is the award year and year t + 1 represents the year after the award year t. The independent variables include NON_MEDIA (a dummy variable equal to one if the CEO won at least one non-media award in year t and zero otherwise) and a set of control variables for CEO and firm characteristics similar to those in Table 4 (not reported here for brevity). The column Main shows the results of the baseline regression (previously reported in Panel B of Table 4). Columns (1) to (9) have an additional dummy variable, including MBA (which takes the value of one if the CEO has an MBA degree), IVY (which equals one if the CEO attended one of the Ivy League institutions), FINTECH_EDUC (which takes the value of one if the CEO has a technical or financial educational background), MILITARY (which takes the value of one if the CEO served in the military), PHD (which equals one if the CEO has a PhD), DEPRESSION_CEO (which takes the value of one if the CEO was born in the period from 1920 to 1929), INVENTOR_CEO (which equals one if the CEO has his or her own patent), and FOREIGN_CEO (which equals one if the CEO was born outside the United States). Data for these nine additional variables are hand-collected from Marquis Who's Who. Industry is a dummy for the two-digit SIC industry code. The industry and year dummies are not reported here for brevity. The *t*-statistics are reported in parentheses. The superscripts ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Main	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Dependent variable *PATENT$_{T+1}$*										
NON_MEDIA	0.538***	0.524***	0.529***	0.430**	0.548***	0.427**	0.538***	0.464***	0.553***	0.411**
	(3.340)	(3.149)	(3.193)	(2.571)	(3.289)	(2.513)	(3.268)	(2.738)	(3.309)	(2.385)
MBA		0.263								0.209
		(1.190)								(0.906)
IVY			0.404*							0.115
			(1.831)							(0.480)
FINTECH_EDUC				0.651***						0.436**
				(3.096)						(1.975)
MILITARY					-0.540					-0.564
					(-1.346)					(-1.420)
PHD						0.618**				0.461*
						(2.483)				(1.732)
DEPRESSION_CEO							-2.354***			-2.073**
							(-2.740)			(-2.311)
INVENTOR_CEO								0.731*		0.170
								(1.791)		(0.393)
FOREIGN_CEO									-0.435	-0.318
									(-1.342)	(-0.974)

CEO characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	347	347	347	347	347	347	347	347	347	347
Adjusted R^2	0.648	0.651	0.658	0.649	0.654	0.656	0.650	0.649	0.667	0.648

Panel B: Dependent variable *CITATION*$_{T+1}$										
NON_MEDIA	0.354**	0.375***	0.378***	0.326***	0.396***	0.346***	0.380***	0.356***	0.383***	0.321***
	(3.467)	(3.399)	(3.422)	(2.921)	(3.586)	(3.043)	(3.443)	(3.147)	(3.441)	(2.748)
MBA		0.144								0.161
		(0.982)								(1.026)
IVY			-0.017							-0.154
			(-0.118)							(-0.948)
FINTECH_EDUC				0.344**						0.287*
				(2.448)						(1.916)
MILITARY					-0.487*					-0.454*
					(-1.833)					(-1.687)
PHD						0.195				0.139
						(1.174)				(0.767)
DEPRESSION_CEO							-0.532			-0.507
							(-0.922)			(-0.833)
INVENTOR_CEO								0.256		0.104
								(0.943)		(0.354)
FOREIGN_CEO									-0.077	-0.083
									(-0.356)	(-0.374)
CEO characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	347	347	347	347	347	347	347	347	347	347
Adjusted R^2	0.551	0.550	0.559	0.555	0.552	0.551	0.551	0.550	0.557	0.551

Table 9: Other robustness checks

This table presents the results for several robustness checks. Panels A and B show the regression estimates of MEDIA and NON_MEDIA, respectively, in the regression model, with PATENT, CITATION, and RD as the dependent variables. The variable MEDIA is a dummy variable that equals one if the CEO won at least one media award in year t and zero otherwise and NON_MEDIA is a dummy variable that equals one if the CEO won at least one non-media award in year t and zero otherwise. Columns (1) to (9) show the regression estimates for each OLS regression with different dependent variables. The dependent variables are PATENT, CITATION, and RD, where PATENT is the logarithm of one plus the number of patents applied for during the year and CITATION is the logarithm of one plus the number of citations per patent. The numbers of patents and citations are obtained from Kogan et al. (2017) and are adjusted for truncation bias following Hall et al. (2001, 2005). The variable RD is annual R&D expenditure scaled by the total book value of assets. Year *t* is the award year and years $t + 1$, $t + 2$, and $t + 3$ represent the one, two, and three years after the award year *t*, respectively. The row *Baseline results* shows the baseline regression estimates (previously reported in Table 4). In Row (1), we add to the baseline sample non-CEO awards, which are awards awarded for contributions/achievements that do not include the CEO's roles (such as awards for social contribution). In Row (2), the last two years of the sample are excluded. In Row (3a) of Panel A, only awards in the sample of Malmendier and Tate (2009) are considered and, in Row (3b), awards from the sample of Malmendier and Tate (2009) are excluded from the set of media awards. In Row (3) of Panel B, awards from Ernst & Young are excluded from the lists of non-media awards. In Row (4), firms that never had any patents are excluded. In Row (5), the two variables *DELTA* and *VEGA* are added to the baseline regression, where *DELTA* is the natural logarithm of one plus the dollar change in wealth associated with a 1% change in the firm's stock price and *VEGA* is the natural logarithm of one plus the dollar change in wealth associated with a 1% change in the standard deviation of the firm's returns. In Row (6), the variable *AMIHUD* is added to the baseline regression, where *AMIHUD* is stock illiquidity, measured following Amihud (2002). In Row (7), the variable *GENERAL_SKILL* is added to the baseline regression, where *GENERAL_SKILL* is a dummy variable that takes the value of one if the general managerial index is above the median of the sample value and zero otherwise. The general managerial index is obtained from (Custodio et al., 2013). In Row (8), the variable *IO* is included in the baseline regression, where *IO* is institutional ownership, computed as the fraction of outstanding common shares owned by all 13F reporting institutions. In Row (9), the variable *G_INDEX* is added to the baseline regression, where *G_INDEX* is a dummy variable that is equal to one if the governance index of the firm is above the median governance index and zero otherwise. The governance index is from Gompers et al. (2003).

Panel A: Media awards

	1 year after the award year			2 years after the award year			3 years after the award year		
	(1) $PATENT_{t+1}$	(2) $CITATION_{t+1}$	(3) RD_{t+1}	(4) $PATENT_{t+2}$	(5) $CITATION_{t+2}$	(6) RD_{t+2}	(7) $PATENT_{t+3}$	(8) $CITATION_{t+3}$	(9) RD_{t+3}
Baseline results	-0.198	-0.211**	-0.003	-0.179	-0.256**	-0.004	-0.105	-0.064	0.001
	(-1.310)	(-2.217)	(-0.658)	(-1.225)	(-2.532)	(-0.978)	(-0.750)	(-0.703)	(0.246)
(1) Including non-CEO awards	-0.267*	-0.115	-0.003	-0.250*	-0.186**	-0.003	-0.217	-0.018	0.002
	(-1.928)	(-1.330)	(-0.854)	(-1.840)	(-2.129)	(-0.772)	(-1.620)	(-0.228)	(0.623)
(2) Excluding 2009 and 2010	-0.200	-0.244**	-0.006	-0.236	-0.350***	-0.006	-0.125	-0.064	0.001
	(-1.090)	(-1.987)	(-0.921)	(-1.291)	(-2.692)	(-1.394)	(-0.708)	(-0.544)	(0.220)
(3a) Including only awards Malmendier and Tate (2009)	-0.216	-0.136	-0.006	-0.034	-0.015	-0.005	-0.043	0.027	-0.010*
	(-1.057)	(-1.047)	(-1.082)	(-0.164)	(-0.112)	(-1.128)	(-0.204)	(0.204)	(-1.967)
(3b) Excluding awards in Malmendier and Tate (2009)	-0.115	0.013	-0.004	-0.061	0.000	-0.006	0.049	0.133	-0.001
	(-0.656)	(0.125)	(-0.944)	(-0.376)	(0.000)	(-1.444)	(0.343)	(1.512)	(-0.241)
(4) Excluding firms that never had any patents	-0.222	-0.175	-0.007	-0.056	-0.239*	-0.006	-0.011	0.100	0.002
	(-1.170)	(-1.430)	(-0.902)	(-0.295)	(-1.705)	(-1.125)	(-0.060)	(0.863)	(0.371)
(5) Controlling for CEO incentives (DELTA and VEGA)	-0.129	-0.205**	-0.003	-0.133	-0.252**	-0.004	-0.059	-0.068	0.003
	(-0.811)	(-2.141)	(-0.657)	(-0.848)	(-2.354)	(-0.944)	(-0.390)	(-0.715)	(0.794)
	-0.254*	-0.221**	-0.003	-0.228	-0.282***	-0.004	-0.159	-0.090	0.001

(6) Controlling for stock liquidity (AMIHUD)	(-1.710)	(-2.339)	(-0.709)	(-1.573)	(-2.811)	(-0.971)	(-1.154)	(-0.984)	(0.235)
(7) Controlling for CEO general managerial skills (GENERAL)	-0.202	-0.212**	-0.003	-0.180	-0.257**	-0.004	-0.105	-0.065	0.001
	(-1.332)	(-2.241)	(-0.711)	(-1.224)	(-2.541)	(-0.968)	(-0.749)	(-0.713)	(0.256)
(8) Controlling for institutional ownership (IO)	-0.218	-0.215**	-0.004	-0.247	-0.333***	-0.004	-0.146	-0.053	-0.001
	(-1.384)	(-2.119)	(-0.697)	(-1.597)	(-3.070)	(-0.941)	(-1.022)	(-0.568)	(-0.220)
(9) Controlling for corporate governance (G_INDEX)	0.123	-0.105	-0.004	0.041	-0.179	-0.005	0.163	0.112	-0.002
	(0.608)	(-0.795)	(-0.559)	(0.207)	(-1.296)	(-0.837)	(0.892)	(0.922)	(-0.464)

Panel B: Non-media awards

	1 year after the award year			2 years after the award year			3 years after the award year		
	(1) $PATENT_{t+1}$	(2) $CITATION_{t+1}$	(3) RD_{t+1}	(4) $PATENT_{t+2}$	(5) $CITATION_{t+2}$	(6) RD_{t+2}	(7) $PATENT_{t+3}$	(8) $CITATION_{t+3}$	(9) RD_{t+3}
Baseline results	0.538**	0.354***	0.002	0.536***	0.406***	0.006	0.479***	0.319***	0.004
	(3.340)	(3.467)	(0.386)	(3.165)	(3.839)	(1.502)	(2.824)	(3.241)	(0.825)
(1) Including non-CEO awards	0.299**	0.131*	0.007	0.255**	0.076	0.003	0.239*	0.125	0.006
	(2.405)	(1.687)	(1.433)	(2.070)	(0.833)	(0.865)	(1.726)	(1.528)	(1.259)
(2) Excluding 2009 and 2010	0.490***	0.387***	0.004	0.439**	0.342***	0.004	0.478**	0.287**	-0.003
	(2.753)	(3.078)	(0.840)	(2.384)	(2.764)	(0.734)	(2.557)	(2.511)	(-0.537)
(3) Excluding Ernst & Young awards	0.552***	0.428***	0.002	0.518***	0.323***	0.006	0.467**	0.232**	0.002
	(3.231)	(3.709)	(0.451)	(2.844)	(2.787)	(1.371)	(2.537)	(2.006)	(0.335)
(4) Excluding firms that never had any patents	0.405**	0.423***	0.004	0.367*	0.321***	0.003	0.432**	0.179	-0.003
	(2.135)	(3.473)	(0.758)	(1.852)	(2.622)	(0.481)	(2.120)	(1.430)	(-0.417)
(5) Controlling for CEO incentives (DELTA and VEGA)	0.463***	0.332***	-0.002	0.381**	0.254**	-0.003	0.486***	0.220**	-0.004
	(2.781)	(3.138)	(-0.432)	(2.173)	(2.339)	(-0.737)	(2.833)	(2.247)	(-0.941)
(6) Controlling for stock liquidity (AMIHUD)	0.530***	0.391***	0.002	0.470***	0.353***	0.001	0.472***	0.269***	-0.003
	(3.143)	(3.526)	(0.434)	(2.694)	(3.265)	(0.175)	(2.713)	(2.661)	(-0.511)
(7) Controlling for CEO general managerial skills (GENERAL)	0.527***	0.374***	0.002	0.458***	0.328***	0.001	0.480***	0.264***	-0.003
	(3.166)	(3.413)	(0.497)	(2.642)	(3.040)	(0.169)	(2.794)	(2.633)	(-0.475)
(8) Controlling for institutional ownership (IO)	0.487***	0.371***	0.001	0.398**	0.298**	0.002	0.383**	0.250**	-0.002
	(2.751)	(3.184)	(0.133)	(2.143)	(2.568)	(0.356)	(2.068)	(2.304)	(-0.260)
(9) Controlling for corporate governance (G_INDEX)	0.614**	0.526***	0.006	0.382	0.241	0.008	0.248	0.130	0.006
	(2.409)	(3.147)	(0.835)	(1.451)	(1.468)	(1.157)	(0.935)	(0.842)	(0.661)

Appendix A. Variable definitions

Variable	Definition	Source
PATENT	The logarithm of one plus the number of patents applied for during the year.	Kogan et al. (2017)
CITATION	The logarithm of one plus the number of citations per patent during the year. The number of citations is adjusted for truncation bias following Hall et al. (2001, 2005).	Kogan et al. (2017)
RD	R&D spending scaled by total assets.	Compustat
MEDIA	A dummy that equals one if the CEO won at least one media award in a given year and zero otherwise.	Marquis Who's Who
NON_MEDIA	A dummy that equals one if the CEO won at least one non-media award in a given year and zero otherwise.	Marquis Who's Who
SIZE	The logarithm of firm size, which is measured by total assets.	ExecuComp
$RETURN_{t-1}$; $RETURN_{t-2}$	Stock returns one or two years before the award year.	CRSP
ROA	The ratio of operating income to book assets.	Compustat
LEVERAGE	The ratio of total debt to book assets.	Compustat
CASH	Measured as cash and assets readily convertible to cash, scaled by book assets.	Compustat
TOBIN'S Q	Market value of equity plus total assets minus the book value of equity, all divided by total assets.	Compustat
AGE	CEO age, measured in years.	ExecuComp
TENURE	CEO tenure, which is the number of years since the current CEO became CEO.	ExecuComp
FEMALE	A dummy that equals one if the CEO is female and zero otherwise.	ExecuComp
MBA	A dummy that takes the value of one if the CEO has an MBA degree and zero otherwise.	Marquis Who's Who
PHD	A dummy that equals one if the CEO has a PhD and zero otherwise	Marquis Who's Who
IVY	A dummy that equals one if the CEO attended an Ivy League institution and zero otherwise.	Marquis Who's Who
FINTECH_EDUC	A dummy that takes the value of one if the CEO has a technical or financial	Marquis Who's Who

	educational background and zero otherwise.	
MILITARY	A dummy that takes the value of one if the CEO served in the military and zero otherwise.	Marquis Who's Who
INVENTOR_CEO	A dummy that equals one if the CEO has his or her own patent and zero otherwise.	Marquis Who's Who
DEPRESSION_CEO	A dummy that takes the value of one if the CEO was born in the period from 1920 to 1929 and zero otherwise.	Marquis Who's Who
FOREIGN_CEO	A dummy that equals one if the CEO was born outside the United States and zero otherwise.	Marquis Who's Who
DELTA	Natural logarithm of one plus the dollar change in wealth associated with a 1% change in the firm's stock price.	Lalitha Naveen's website: https://sites.temple.edu/lnaveen/data
VEGA	Natural logarithm of one plus the dollar change in wealth associated with a 1% change in the standard deviation of the firm's returns.	Lalitha Naveen's website: https://sites.temple.edu/lnaveen/data
AMIHUD	Stock illiquidity measured following Amihud (2002).	CRSP
IO	Institutional ownership, computed as the fraction of outstanding common shares owned by all 13F reporting institutions.	Thompson Reuters Institutional 13F
GENERAL_SKILL	General managerial skills over the executive's lifetime work experience.	Custodio et al. (2013)
G_INDEX	A dummy that equals one if the governance index of the firm is above the median governance index and zero otherwise. The governance index is from Gompers et al. (2003).	Gompers et al. (2003)

Appendix B. List of CEO media awards

Name of award	Organization
Laurel Citation	Aviation Week & Space Technology Magazine
Laurel Award	Aviation Week & Space Technology Magazine
The World's Best CEOs	Barron's Magazine
Top Manager	Business Week
The Top 25 Managers	Business Week
CEO of the Year	CEO Magazine
CEO of the Year	Chief Executive Magazine
One of the 50 Who Matter Now	CNNMoney.com Business 2.0
Computer Reseller News Hall of Fame	Computer Reseller News
CEO of the Year	Electronics Business Magazine
Man of the Year	Financial Times
The 100 Most Powerful Women	Forbes Magazine
The Most Powerful Women in American Business	Fortune Magazine
The 40 Under 40	Fortune Magazine
Technology Leader of the Year	Industry Week
CEO of the Year	Industry Week
Industry Achievement Award	InfoWorld magazine
Top CEO	Institutional Investor Magazine
The 30 Most Powerful Women in America	Ladies Home Journal
The 50 Most Powerful People in Hollywood	Premiere Magazine
Retail Executive of the Year	Retail Merchandiser magazine
The 100 Most Influential Women in Business	San Francisco Business Time
Innovation Award in Communications	The Economist
The 50 Women to Watch	The Wall Street Journal
Man of the Year	Time Magazine
The Top 50 Cyber Elite	Time Magazine
Person of the Year	Time Magazine
The 100 Most Influential People in the World	Time Magazine
Manager of the Year	Stark's Truck & Off-Highway Ledger
Number One on the List of Best CEOs	Worth Magazine

Appendix C. List of CEO non-media awards

Name of award	Organization
Scientist of the Year Award	Achievement Rewards for College Scientists
Industrialist of the Year Award	America-Israel Chamber of Commerce
Medal Achievement Award	American Electronics Association
CEO Coach of the Year	American Football Coaches Foundation
Appeal of Conscience Award	Appeal of Conscience Foundation
Distinguished Information Sciences Award	Association Information Tech. Professionals
Ada Lovelace Award	Association Women in Computing
Bio-IT Champion	Bio-ITWorld
Golden State Award	Board Directors California Council for International Trade
Person of the Year	Brazilian-American Chamber of Commerce
Excellence in Management Award	California Institute Technology Management Association
Manufacturer of the Century	California Institute Technology Management Association
California Industrialist of the Year	California Museum of Science and Industry and the California Museum Foundation
Director of the Year Award for the Enhancement of Economic Values	Corporate Director Forum
Cap Gemini Ernst & Young Leadership Award for Global Integration	Ernst & Young
Ernst & Young Entrepreneur of the Year	Ernst & Young
Dr. Morris Chang Exemplary Leadership Award	Fabless Semiconductor Association
Bower Award in Business Leadership	Franklin Institute
Leadership and Vision Award	French-America. Chamber of Commerce San Francisco
Hall of Fame	Greater Cincinnati and Northern Kentucky Business
Christopher Columbus Award	Greater Columbus Chamber of Commerce
Statesman of the Year	Harvard Business School
Excellence in Leadership Communication Award	International Association Business Communicators
Cinema Digital Technological Award	International Film Festival
Award for Excellence in Business, Engineering & Tech	John M. Olin School of Washington University
Warren Bennis Award for Leadership	Linkage Organization
Women of Excellence Award	National Association Female Executives
Industrial Leadership Award	National Defense Industrial Association
Executive of the Year	National Management Association
American Spirit Award	National Retail Federation
Bob Hope Distinguished Citizen Award	National Security Industrial Association
National Medal of Technology	President of the United States
Annual Business Management Award	Société de Chimie Industrielle
International Palladium Medal	Société de Chimie Industrielle
Excellence in Leadership Award	Stanford Graduate School of Business
M. Eugene Merchant Manufacturing Medal	American Society of Mechanical Engineers
Dr. Morris Chang Exemplary Leadership Award	Fabless Semiconductor Association
Fleet Admiral Chester W. Nimitz Award	Navy League of the United States

Rear Admiral John J. Bergen Leadership Medal, Navy League	United States New York Council
Award for Business Excellence	University California School Business Administration
Daniel J. Epstein Engineering Management Award	University of Southern California
National Sales Hall of Fame	William Paterson University Foundation
Ronald H. Brown Standards Leadership Award	World Standards Day Planning Committee
International Achievement Award	World Trade Club