The following publication Wang, R., Lee, C.-J., Hsu, S.-C. and Chen, J.-H. (2021), "Preventing or encouraging illegal activities by construction firms: effects of top management team compensation and aspiration-performance discrepancies", Engineering, Construction and Architectural Management, Vol. 28 No. 6, pp. 1739-1760 is published by Emerald and is available at https://doi.org/10.1108/ECAM-08-2019-0440.

Preventing or Encouraging Illegal Activities by Construction Firms: Effects of Top Management Team Compensation and Aspiration-Performance Discrepancies

Abstract

Purpose - Corporate illegal activities may result in fatal injuries and economic losses and have been widely reported in the construction industry. This study is to investigate the relationship between top management team (TMT) compensation and corporate illegal activities with the moderating effects of aspiration–performance discrepancies.

Design/methodology/approach - Using a multi-year sample of China construction firms from 2011 to 2017, this paper employed hierarchical logit regression model with fixed effects.

Findings - This study indicates that TMT compensation is positively related to the likelihood of corporate illegal activities. It also finds performance higher than aspirations would lower the probability of illegal activities while performance lower than aspirations also decreases the occurrence of illegal behaviors. Finally, the positive relationship between TMT compensation and illegal activities is strengthened by aspiration–performance discrepancies.

Practical implications – It recommended the design of executive compensation may need to be reconsidered. Next, companies need to carefully monitor top management team, especially when performance is lower than the desired level. Finally, debt-to-equity ratio deserves more attention for Chinese construction firms in suppressing illegal activities.

Originality/value - Given the mixed effects of TMT compensation, this study confirms its positive impact on corporate illegal behaviors. Consistent with the behavioral theory of the firm, it unveils the direct and moderating effects of aspiration-performance discrepancies. The findings are beneficial for evaluating firms' performance and considering the prevention of corporate fraudulent activities.

Keywords: corporate illegal activities; top management team; compensation; aspiration; performance

Introduction

There have been many paradoxes in the construction industry in terms of corporate social responsibility (CSR) (Lu Weisheng et al., 2016). Even though this sector contributes largely to the national economy and influences human health and social activities, the construction industry has been considered irresponsible. It is one of the most corrupt industries (Transparency International, 2008) and faces many ethical challenges (e.g., fraud, bid shopping) (Ho, 2011). The illegal acts, such as using inferior materials and faking financial statements, may be taken by the business when firms consider the upside benefits of those behaviors exceed the downside risk (Mishina et al., 2010). Revelations of such corrupt practices often result in massive and ruinous consequences. Not only do stock prices immediately fall or billions of dollars lost, but companies also may end up bankrupt (Firth et al., 2011; Xu et al., 2016). Particularly, the results in the construction industry may be even worse, like the fatal injuries and deaths (Chan and Owusu, 2017; Transparency International, 2005). To reduce this scourge, the Anticorruption Model Questionnaire instrument and other strategies were proposed (Saenz and Brown, 2018). Regrettably, corruption, and other illegal activities have been widely reported in the construction industry (Signor Regis et al., 2016).

Given the severe consequences and frequent occurrence, the underlying factors that may lead to committing fraudulent acts have drawn the attention of scholars. Some environmental factors, such as environment turbulence (Silvestre et al., 2018) and industrial climate (Le et al., 2014) are addressed while more and more researchers consider the internal characteristics of firms such as firm size (Baucus and Near, 1991), and board structure (Lee et al., 2018; Wang et al., 2018). However, as organizations are legal fiction after all, and activities

are indeed conducted by individuals. It is difficult and inadvisable to analyze organizational misconduct without considering individuals. From the standpoint of the individual level, a great number of studies have been generated to explore the antecedents of organizational wrongdoings. These studies have been classified into five theories, namely rational-choice perspectives (Grossman and Hart, 1983; Milgrom and Roberts, 1988), strain theory (Agnew et al., 2009; Langton and Piquero, 2007), culture theories (Ashkanasy et al., 2006; Kulik, 2005), network theories (Brass et al., 1998; Briscoe and Safford, 2008) and accidental misconduct perspective (Cohan, 2009; Vaughan, 1999). Besides the role of a single individual, groups in an organization could not be neglected because groups are generally subject to majority-rule and their decisions are riskier (Zaleska, 1976). Thus, organizational wrongdoings are likely to be a result of group decisions.

Among the groups in an organization, one particularly important is the top management team (TMT). Top managers often work collectively as a dominant coalition because managing a firm is a shared effect in general (Cyert and March, 1963). Thus, TMT rather than an individual executive has been a focus of many studies (Heavey and Simsek, 2017; Li, 2018; Sahaym et al., 2016; Yoo and Reed, 2015). The critical role of TMT in determining organizational outcomes has been emphasized by upper echelons theory and related studies (Hambrick and Mason, 1984; Strand, 2013; Zhang et al., 2015). Their role in corporate illegal activities is also salient because TMT is often the initiator of organizational misconduct and can make individual or group wrongdoings become an organizational phenomenon (Greve et al., 2010). Thus, it has become a consensus that corporate wrongdoing is more often the result of actions or inactions, deliberate or inadvertent, of top managers in organizations (Collins et al., 2009; Daboub et al., 1995; Zahra et al., 2005). TMT has the responsibility for setting the overall direction of an organization (Hambrick and Mason, 1984), and once the team decides how it will behave, corresponding actions and even corporate wrongdoings may follow. This

belief seems to be the legal basis for holding business executives personally liable and subject to fines or potential incarceration. To solve the possible moral hazards and to motivate executives, firms design executive compensation packages as an important mechanism to align shareholder and managerial interest and motive managers (Conyon and He 2011). It includes performance-based pay, stock options, and restricted stock and other elements (Devers et al., 2007), which are aimed to reward executives for gains in shareholder value so that the benefits of shareholders and managers can be aligned (Wowak et al. 2015).

It is surprising, however, scholars have not yet reached a consensus about the effect of executive compensation system (Devers et al., 2007). Its association with firm performance may be positive (Nyberg et al., 2010), insignificant (Carpenter and Sanders, 2004) and negative (Hanlon et al., 2003). Similarly, the relationship between TMT compensation and corporate illegal behaviors is not concurred either (O'Connor et al., 2006; Schnatterly et al., 2018; Shi et al., 2016). It has been reported that compensation is positively associated with corporate fraudulent behaviors (Minor, 2016; Wowak et al., 2015) as well as negatively associated (Armstrong et al., 2010; Conyon and He, 2016). Due to the influence of industrial culture and other industry characteristics, it is worth a revisit to unveil the effects of compensation design/system in the construction industry. Thus, the first emphasis in this study is to investigate whether improving TMT pay level could reduce the incidence of corporate wrongdoings in the context of the construction industry.

The inconsistency on the effect of TMT compensation may be, at least in part, because of neglecting the situational factors. Situations may affect both an organization's structural choices and strategies and thus the most desirable strategy needs to alter relying on certain contextual factors (Donaldson, 1996; Roh et al., 2016; Zott and Amit, 2007). Simpson (2002) also claims that organization wrongdoings have much to do with organizational contingencies. Similarly, contextual factors may exert influences on the effects of compensation on corporate

illegal behaviors. O'Connor et al. (2006) found larger stock options for a CEO may lead to a higher incidence of fraudulent reporting and sometimes a lower incidence, depending on whether the CEO and chairman positions are separated. Besides CEO duality, another potential but neglecting contextual factor is relative firm performance given that executive compensation is often tied to firm performance and organizations strive to achieve their desired level (Harris and Bromiley, 2007). Therefore, this research argues that a firm's performance gap relative to its desired level may influence the relationship between executives' compensation and corporate wrongdoings. The second emphasis in this study is to investigate the moderating effect of performance discrepancies on the relationship between TMT compensation and corporate illegal behaviors. Performance discrepancies refer to the gap between a construction company's performance and its aspiration level (Lant, 1992; Yang et al., 2017). The aspiration level is "the smallest outcome that would be deemed satisfactory by the decision maker" (Greve, 2003a; Schneider, 1992). Exploring whether the effects of TMT compensation would be affected by performance discrepancies may facilitate the understanding of how to make good use of TMT compensation to alleviate the commitment of illegal activities.

Besides the abovementioned research purposes, this study chooses publicly listed construction firms in China as the sample. The construction industry has been a prominently high-risk sector (Beltrão and Carvalho, 2019) and considered as the most vulnerable to corrupt behaviors (Chan and Owusu, 2017). Moreover, because of the unique features of the construction industry (e.g., high financial leverage, project-oriented operation), senior managers are tempted to win new client projects at the risk of breaking laws (Rebeiz & Salameh, 2006) especially for short-lived or temporary projects (Betts and Wood-Harper, 1994). It is necessary to consider what managers' role is in shaping organizational ethics and guiding the company to operate compliantly within a legal context.

The remainder of this study is organized as follows. The next section details the

development of the hypotheses. Then the data on traded publicly construction companies and methods for testing the developed hypotheses are described. The results are then reported, followed by a discussion of the theoretical and practical implications.

Literature Review and Hypothesis Development

This study begins by presenting the hypothesis for TMT compensation's influences on corporate illegal activities. The following hypotheses build on the behavioral theory of the firm and address the effect of aspiration-performance discrepancies. Particularly, the possible moderating effects of aspiration–performance discrepancy on the relationship between TMT compensation and corporate illegal activities are emphasized.

TMT Compensation

Prior work on predicting and preventing corporate criminal activities has evidenced the role of executive compensation (Johnson et al., 2009; Peng and Röell, 2008). In the absence of complete information and credibly enforceable-contracts, agents (i.e., top managers) might potentially behave opportunistically at the expense of principal (i.e., shareholders). As a vital effort to mitigate the agency cost resulting from the separation of control and ownership, TMT compensation is designed to align the interests of multiple participants. When executives are well-compensated and the majority of their wealth is closely linked to a company, they are expected to act in the company's best interest, engage in fewer opportunistic actions, and be less likely to behave wrongfully or illegally at work (Jensen and Meckling, 1976; Jensen and Murphy, 1990).

From the labor market perspective, Jensen (1993) argues competition in the managerial labor market promotes effective corporate governance and plays an important role in disciplining top executives. Managers involved in illegal activities tend to lose their jobs and have difficulty finding another one. If top executives are held accountable for the violations of

their firms, it is expected that managers losing their jobs would suffer a larger compensation penalty when their compensation is higher. The firing mechanism to discipline senior executives could contribute to the change of risk attitude of managers. When violations are financially costly (Firth et al., 2011), executives may become risk-averse (Jensen and Meckling, 1976), such that their desire to reduce their loss outweighs that to increase their gain (Kahneman and Tversky, 1979). Therefore, to avoid the loss of their wealth, managers may be reluctant to engage in the risky illegal behaviors.

Conversely, an argument could be made that executive compensation increases the probability of corporate illegal behaviors. Although previous studies on executive compensation typically draw on agency theory, bounded rationality perspective indicates that rewards for specific outcomes increase the probability that individuals work toward those outcomes. Since the primary mechanism by which top managers are evaluated is by firm performance (Arthaud-Day et al., 2006), executives may constantly feel pressured to report consistent and positive firm performance to stockholders. Thus they may be tempted to cover up problems, take excessive risks, or exaggerate performance potential to present their work in the best possible light (Zahra et al., 2005). DuCharme et al. (2001) found some managers would purposely manipulate earnings or misrepresent the firm's financial outcomes to maximize individual benefit.

Other empirical studies have demonstrated that executive compensation may be positively associated with corporate misconduct. Harris and Bromiley (2007) suggest that higher compensation increases the likelihood of financial misrepresentation. Efendi et al. (2007) provided empirical evidence that higher CEO compensation increases greatly the probability of misstated financial statement. When highly compensated managers have a strong incentive to protect their income, they might attempt to window-dress financial statements via illicit actions. Although managers generally behave ethically, the likelihood of doing business

illegally rises with the level of compensation. It is easy to be ethical if a small portion of one's pay is at stake; it is hard when a substantial amount is influenced through illegal behaviors. That is, executives may prefer honesty, but the incentives of gaining more personal wealth may promote corporate wrongdoings.

In summary, the effects of TMT compensation may vary in different decision-making scenarios, depending on losing the existing wealth or gaining more coming benefits. Based on the two competing incentives, we thus propose the null hypothesis.

Hypothesis 1: TMT compensation has no significant bearing on the likelihood of corporate illegal activities because of the diverse perception of executives.

Aspiration-Performance Discrepancies

Prior studies (Hill et al., 1992; Schnatterly et al., 2018) show that firms with the low or declining performance or suffering from problems (e.g., losing a competitive position) are more likely to be involved in illegal activities. However, other studies report a contradictory finding that high performing organizations are more likely to engage in illegal behaviors after achieving higher performance than their peers (Mishina et al., 2010). Although scholars have provided sensible explanations of apparently contradictory findings, it remains the fact that some studies show that declining performance leads to illegal activities, while others indicate that improving performance leads to violating the laws. Acknowledging the inconsistent findings, Gavetti et al., (2012) suggest that the conflicting results might be achieved by considering the role of managerial aspiration levels.

Different from the classic economic theories assuming that a firm's goal is to maximize its profits, the behavioral theory of the firm (Cyert & March 1963; March & Simon 1958) suggests that firms endeavor to achieve their target on performance evaluation. The target level, or say aspirations, is mainly derived from two aspects, the firm's historical performance and

the competitors' performance (Desai, 2016). Firms compare their performance with their past achievements and then adjust their goals for future development (March and Simon, 1958). They also evaluate their performance by comparing it with their peers' or competitors' according to social comparison theory (Festinger, 1954).

Following the behavioral theory, a discrepancy between performance and aspirations signifies that the status is problematic, and new solutions are needed. Then firms will initiate problematic search and are willing to seek changes and even risky ways to improve the current performance (Brown and Loosemore, 2015; March and Shapira, 1987). This process also exerts influences on bank lending practices (McNamara and Bromiley, 1999), innovation (Greve, 2003a), safety initiatives (Baum and Dahlin, 2007) and acquisitions (Iyer and Miller, 2008). In parallel with these previous studies, this study argues that corporate illegal activities are also among available options when firms initiate a problematic search. Firms may engage in corporate wrongdoings to increase the performance to a satisfactory level.

If the current performance is better than aspiration, firms would perceive the status as a success. Since organizations guide their behaviors by encoding the references from history into the routine (Levitt and March, 1988), firms may be reluctant and even averse to engaging in any risky activities that may change the current success (Gavetti et al., 2012). Among the risky activities, corporate illegal actions are very costly. In fear of penalty and other possible economic and reputation loss (Williams and Barrett, 2000), firms tend to keep the routine with the least possible changes and have far much incentive to reduce wrongdoings. The inertial forces would counteract the risky illegal actions when performance is above aspiration but not work when performance is below aspiration. Then the effects of performance on illegal activities are weaker for performance greater than aspiration. Taken together, when firms' performance relative to aspirations increases, the likelihood of corporate illegal activities decreases. The decrease would be more rapid when firms' performance above aspirations than

when performance below aspirations. The following hypotheses are developed.

Hypothesis 2a: The likelihood of corporate illegal activities decreases as aspiration-performance discrepancies increases.

Hypothesis 2b: The decrease is more rapid for firms' performance above aspirations than for performance below aspirations.

Moderating Effects of Aspiration–Performance Discrepancy

Prior research on corporate illegal activities has addressed many factors like firm performance, firm structure, and executive compensation that are associated with unethical or illegal activities (e.g., Harris & Bromiley, 2007; Johnson et al.,2009). Among theories of fraudulent behaviors, strain perspective builds on the premise that firms are more likely to behave wrongfully when individuals suffer from performance pressure (Hill et al., 1992; Schnatterly et al., 2018). When an organization is under strain, individuals who internalize the achievement gap may be motivated to commit illegal activities. That is, organizational wrongdoing not only is influenced by an employee's needs (i.e., financial wellness) but has a lot to do with organizational contingencies, priorities, and goals (Simpson, 2002). A firm's performance relative to aspiration reflects the degree to which managers are aware of strain, as well as the extent to which they view it as relevant.

When performance is lower than aspiration, top managers are under intense pressure to drive growth and deliver strong results to meet shareholders' expectations (Arora and Dharwadkar, 2011). Those with high compensation and thus with potentially the most to lose will have a strong motivation to take illegal activities. That is, the potential costs of not meeting aspirations increase the likelihood of illegal behavior, and that likelihood is even greater when a firm is under strain. This implies managers under performance pressure will be more likely to believe their financial well-being would be affected or even their positions are threatened.

Then, the likelihood of engaging in corporate illegality would increase.

When performance exceeds aspiration, managers would prefer taking fewer risks to maintain their existing success (March and Shapira, 1987). Under this circumstance, a manager's position, reputation, and economic benefit would be retained and the motivation to engage in illegal activities would be lower. They may even have some inertial forces to counteract fraudulent doings. Hence, the relation between TMT compensation and corporate illegal activities would be weaker. The following hypotheses are constructed.

Hypothesis 3a: As performance falls below aspirations, it strengthens the relationship between TMT compensation and the likelihood of corporate illegal activities.

Hypothesis 3b: As performance increases above aspirations, it weakens the relationship between TMT compensation and the likelihood of corporate illegal activities.

Method

Sample and Data

Our samples are made up of publicly traded construction companies in China. The data is derived mainly from the CSMAR (GTAFE) and CCER (Sinofin) database. By primarily searching the listed construction companies in these databases, this study focused on the enforcement information announced by the China Securities Regulatory Commission (CSRC), Ministry of Housing and Urban-Rural Development (MOHURD), and other governmental institutions. The enforcement information is comprised of the case description, supervisors, violation type, related laws and regulations, and other information. The violation type includes not only misleading statement and other false information disclosure, but also the usage of substandard construction materials and other criminal activities. Through carefully reviewing

the violation cases, this study identifies the year in which illegal events occurred rather than the date of announcement used by prior studies (e.g., Chen et al., 2016; Hass et al., 2016). In a few cases where the illegal activities last for several years (e.g. using poor materials in a project), this study assumes that the companies could have stopped the illegal behavior at any time so that they are regarded as guilty each year. For the cases for which it is difficult to identify the period, this study assumes the behavior was detected by the CSRC as soon as it occurred. Due to data availability, 36 companies were selected as the final sample. To capture as many observations as possible and to get a more generalized result, the period from 2011 to 2017 was used. Thus, this study yielded a final total of 252 firm-year observations.

Measures

Dependent Variable

As the dependent variable, corporate illegal activities (CIA) is a dichotomous variable, operationalized by whether violations were committed by firms in a focal year. When a company is convicted of being a violator in a focal year, the CIA is coded 1 and otherwise 0 (Baucus and Baucus, 1997; Harris and Bromiley, 2007). Among our samples, the most frequent type of violations is delayed disclosure, and the second and third frequent types are serious loopholes and false records. Besides, a company has been found guilty of using poor materials and another company has been found guilty of illegal emission of pollutants.

Independent Variable

The measurement of TMT compensation has not achieved consensus (Devers et al., 2007). Although in many studies (Devers et al., 2007; Harris and Bromiley, 2007) restricted stock and stock options were used to compute incentive compensation, they are rarely used in Chinese firms. Consistent with recent studies in China (Conyon and He, 2012, 2016; Lu and Shi, 2018),

this study measured compensation as the average of total pay in TMT. Total pay is defined as the sum of basic salary, stipends, and bonus. A bonus is determined based on firm performance, though the calculation process and the actual bonus information are unveiled (Firth et al., 2007). To deal with the fact that pay is positively skewed (Conyon and He, 2011, 2012, 2016), this study uses its natural logarithm transformation.

Aspiration–performance discrepancy is calculated based on performances relative to social and historical aspiration mentioned in previous literature (Bromiley and Harris, 2014; Gaba and Bhattacharya, 2012). These two aspirations were combined by the weighted average model (Greve, 2003a; O'Brien and David, 2014). This model assumes there is a single goal for a period. This is consistent with corporate practice and this single goal is established based on the balance of industrial and historical performance. More importantly, this model is considered to align most closely with the behavioral theory proposed by Cyert and March (1963). Their original model constructs aspiration as a linear mixture of a firm's past aspiration, historical performance, and its competitors' average performance in the last year. By mathematically transforming the original model, the formulation of the weighted average model could be generated.

Specifically, aspiration–performance discrepancy equals the difference of the current performance and the two aspirations, shown as follows:

$$RP_{i,t} = P_{i,t} - A_{i,t} \quad (1)$$

Where relative performance $RP_{i,t}$ denotes aspiration–performance discrepancy for firm i at time t, $P_{i,t}$ is the current performance, and $A_{i,t}$ is aspiration that is calculated as follows:

$$A_{i,t} = a_1 SoA_{i,t} + (1 - a_1) SeA_{i,t} \quad (2)$$

Where $SoA_{i,t}$ is social-referent aspiration and $SeA_{i,t}$ represents self-referent aspiration. Their calculation equations are as follows:

$$SoA_{i,t} = IP_{i,t} = \left(\sum_{i \neq j} P_{j,t}\right)/(N-1) \quad (3)$$

$$SeA_{i,t} = a_2 SeA_{i,t-1} + (1 - a_2) P_{i,t-1} \quad (4)$$

Where $IP_{i,t}$ is the industry performance. Equation 3 shows that social aspiration, equaling the industry performance, is the average performance in the industry excluding the focal company. Equation 4 demonstrates self-aspiration is determined by the weighted sum of self-aspiration and performance in the last year. Specifically, self aspiration is operationalized as an exponentially weighted moving average of historical performances. For example, the self-aspiration in the Year 2011 (the first year we investigate) is calculated based on performance in the Year 2010 and Year 2009. Therefore, the overall equation of aspiration–performance discrepancy is as follows:

$$RP_{i,t} = P_{i,t} - a_1 IP_{i,t} - (1 - a_1)(1 - a_2) \sum_{j=0}^{\infty} a_2^j P_{i,t-1-j} \quad (5)$$

The two parameters a_1 and a_2 in the above equation can be estimated by grid search (Rhee et al., 2019; Vissa et al., 2010). Each time, a_1 and a_2 are assigned a value randomly from the set [0, 0.1, 0.2, …, 0.9, 1] (in increments of 0.1). This leads to 121 sets of aspiration–performance discrepancies. Using one set of constructed aspiration–performance discrepancies each time, this study estimates hundreds of full models (Model 5 below) and selects the one with the maximum likelihood. $a_1 = 0.2$ and $a_2 = 0.9$ provide the best model fit. $a_1 = 0.2$ means that self comparison dominates this blended measure of aspirations. This is in line with Rowley et al. (2017) which also found that firms would react to the performance goals depending more strongly on the historical performance rather than their competitors' performance. Especially when they are claimed to undertake some unique strategies, their performance changes are more meaningful to take as the referent point. $a_2 = 0.9$ represents the updating of self-aspiration relies more on past performance rather than recent performance (Greve 1998, 2003b). This is reasonable considering the greater payback period for the construction industry than other service industries (Alfeld, 1988).

Following many studies based on the behavioral theory of the firm (Bromiley and

Harris, 2014; Greve, 1998, 2003a), a spline function is employed to determine whether performance greater or lower than aspirations has different impacts on corporate illegal activities. In mathematics, the slope for performance above aspiration may be different from that for performance below aspiration. To do so, the aspiration–performance discrepancy is split into positive and negative. The positive aspiration-performance discrepancy, also called positive relative performance (PRP), indicates the status when the discrepancies are above zero, while negative aspiration–performance discrepancy or say negative relative performance (NRP) represents the status when discrepancies are below zero. The following two continuous but censored variables are constructed.

$$Positive\ RP_{i,t} = \begin{cases} P_{i,t} - A_{i,t},\ if\ P_{i,t} > A_{i,t} \\ 0,\ if\ P_{i,t} \leq A_{i,t} \end{cases} \quad (6)$$

$$Negative\ RP_{i,t} = \begin{cases} 0,\ if\ P_{i,t} \geq A_{i,t} \\ P_{i,t} - A_{i,t},\ if\ P_{i,t} < A_{i,t} \end{cases} \quad (7)$$

Two kinds of performance were considered, Return on Assets (ROA) and Debt-to-Equity Ratio (DER). ROA is commonly used (Chen et al., 2009; Shen and Lin, 2009). Higher ROA represents better profitability. DER signifies firm leverage (Ferguson and Shockley, 2003; Schmukler and Vesperoni, 2006) and also reflects organizational slack, the stock of available resources that can be diverted or redeployed for an organization to achieve their goals (Arora and Dharwadkar, 2011; Kuusela et al., 2017). This study added DER because of a distinctive feature of the construction industry—most construction companies are operated on borrowings. This sector is considered a high-risk one because DER in many construction companies is too high (Rebeiz and Salameh, 2006). Compared with non-financial listed companies in other industries in China, DER in the construction industry is the highest from 2002 to 2016 (Roberts and Zurawski, 2016). As DER rises, financial risks grow (Edum-Fotwe et al., 1996) and the probability of firm bankruptcy increases (Easterbrook, 1984). A high DER also represents high expected costs of financial distress, bankruptcy, or liquidation (Margaritis and Psillaki, 2010).

Moreover, DER has been treated as a natural proxy for the risk of common equity of a firm (Bhandari, 1988).

Combining positive and negative relative performance (PRP and NRP) with ROA and DER, four variables are constructed to measure aspiration–performance discrepancy. They are positive relative performance for ROA (PRP-ROA), negative relative performance for ROA (NRP-ROA), positive relative performance for DER (PRP-DER), and negative relative performance for DER (NRP-DER). PRP-ROA and NRP-DER reflect performance above aspiration, while NRP-ROA and PRP-DER imply performance below aspiration.

Interaction Terms

To test hypotheses 3a to 3b, this study constructed several interaction terms showing the moderating effect of aspiration–performance discrepancy on the relationship between TMT compensation and corporate illegal activities. The interaction term is calculated by multiplying aspiration–performance discrepancy and TMT compensation. To avoid multicollinearity and unstable regression estimates resulting from the fact that interaction terms are always highly associated with its constituents, this study followed the "centering" (or demeaning) procedures (Aiken et al., 1991). Specifically, the mean of each variable was subtracted from the raw value for each observation, before the multiplying process. Through the above procedures, four interaction terms were created, including Compensation×PRP-ROA, Compensation×NRP-DER, Compensation×NRP-ROA, and Compensation×PRP-DER.

Control Variables

The estimating model also includes several control variables, including firm size, TMT size, CEO duality, number of female managers, stock ownership by TMT, average tenure, and tenure variance. They are also used as control variables in some studies about executives' compensation (Al-Shaer and Zaman, 2019; Hou et al., 2017; Shi et al., 2016; Wowak et al.,

2015). A larger firm has been evidenced empirically to be related to executives' compensation (Tosi and Gomez-Mejia, 1994) and more likely to commit corporate illegal activities (Baucus and Near, 1991). Firm size is controlled and operationalized by the natural log of the number of employees (Lee et al., 2018). TMT size may influence a firm's decision-making process. A larger team has more potential for dissimilarity and is likely to have conflicting thinking (Wiersema and Bantel, 1992). This may result in the reduction of corporate illegal activities. TMT size is measured as the number of top managers in total (Dauth et al., 2017). CEO duality is considered due to the CEO's influence (Shi et al., 2016). When a CEO serves as chairman inboard, he/she has more power in decision-making and can increase information asymmetry. This would lead to the board of directors failing to block his/her violating decisions (Sharma, 2004). CEO duality equals to 1 if the CEO holds the chairman seat inboard and otherwise 0. The number of female managers is also controlled (Jurkus et al., 2011) because women are less overconfident, more risk-averse, and less likely to conduct fraudulent activities (Cumming et al., 2015). The stock ownership by TMT has been reported to exert an influence on the attitude of risk-taking and thus on the likelihood of corporate wrongdoings (Troy et al., 2011). It was operationalized by the percentage of total shareholdings by top managers (Shi et al., 2017). Besides, this study controlled average tenure and tenure variance, operationalized by the average of the number of years when top managers served in the focal company and its variance (Zhang et al., 2015). With increasing tenure, executives may be prone to strategic inertia (Hambrick and Mason, 1984). That is, they would unlike some risky strategies, such as risky illegal activities. Thus, TMT tenure is expected to be negatively associated with corporate illegal activities (Daboub et al., 1995). Tenure variance represents the heterogeneity of TMT, which has been found to affect group decision-making (Pfeffer, 1983). A heterogenous TMT is expected to hinder deviant decisions and generate acceptable and lawful solutions (Daboub et al., 1995).

Analysis

Since this research involves a dichotomous dependent variable (corporate illegal activities), a categorical control variable (CEO Duality), as well as other continuous variables, the hierarchical logit regression model with fixed effects, is applied (Christensen, 2016; Ege, 2015). Logit regression is robust in most situations because of its minimal set of assumptions. It does not require the distributional form of independent variables or the linear relationship between independent variable(s) and dependent variable (Hair et al., 2014). Considering the panel structure of the data, there may be some unobserved characteristics for each firm that exert some influences on the independent variables. To address such potential bias, the fixed effect model is employed to specify the unobserved cross-sectional differences among firms (Chang and Chung, 2017). To check for possible multicollinearity, collinearity diagnostics were run. The variance inflation factors (VIFs) were below the threshold of 10 (ranging from 1.094 to 1.740), implying no significant collinearity (Hair et al., 2014). The analysis procedure included three steps. The first step examined the relationship between the dependent variable and the control variables only. Then this study tested the effect of independent variables and the moderator—TMT compensation and aspiration–performance discrepancy—on the dependent variable. In the last step, moderated regression was employed, and a set of interaction terms was entered to test whether aspiration–performance discrepancy could moderate the relationship between TMT compensation and corporate illegal activities.

Results

Tables 1 and 2 provide descriptive statistics and a correlation matrix, while Table 3 presents the results of hierarchical logit regression. In Table 3, the first column reports estimates with control variables only. The second column reports estimate considering the independent variables. The third and fourth columns present the respective effects of four moderators. The

last column provides the results of the full model.

[Table 1 near here]

[Table 2 near here]

[Table 3near here]

According to Table 3, the results of Model 2 support Hypothesis 1 indicating that TMT compensation has an insignificant influence on the likelihood of corporate illegal behaviors (0.70, $p>0.1$). When considering performance discrepancies (in particular DER) simultaneously, the coefficient of TMT compensation is significantly positive (1.08, $p<0.05$; 1.03, $p<0.05$), shown in Model 4 and Model 5. This verifies the relationship between TMT compensation and corporate illegal behaviors is affected by the situational factors (i.e., aspiration-performance discrepancies). Hypothesis 2a and 2b argue that the likelihood of illegal activities would decrease as aspiration-performance discrepancy increase and the decrease would be more rapidly for positive aspiration-performance discrepancy than negative aspiration-performance discrepancy. The coefficients of NRP-ROA and PRP-ROA are both insignificant, the coefficient of PRP-DER is significantly negative (-0.71, $p<0.1$), and the coefficient of NRP-DER is positive at the significance of 5% (0.72, $p<0.05$; 0.74, $p<0.05$). Thus, Hypothesis 2a is supported when performance is above aspiration. Hypothesis 2b is not fully supported because the coefficient signs for performance above and below aspiration are different, and the likelihood of corporate illegal activities surprisingly increases as performance below aspiration increases, which is out of our expectation.

For the moderating effect of aspiration–performance discrepancy on the relationship between TMT compensation and corporate illegal behaviors, only the interaction term of PRP-DER and TMT compensation has a significant positive coefficient (1.01, $p<0.1$; 1.22, $p<0.1$), consistent with Hypothesis 3a. However, Hypothesis 3b is not supported considering the interaction term of NRP-DER and TMT compensation, as well as the interaction term of PRP-

ROA and TMT compensation, which is insignificant. Figure 1 is a diagram depicting the joint effect of TMT compensation and PRP-DER using the odds ratio in Model 5. The value of compensation in this plot ranges from a standard deviation below the mean to a standard deviation above (Dawson, 2014). The value of high PRP-DER equals a standard deviation above the mean, while that of low PRP-DER equals 0 given that a standard deviation below is not in the range of the central value. According to Figure 1, whether the PRP-DER is low or high, the likelihood of corporate wrongdoing increases as TMT compensation rises, but the increasing speed of the likelihood of illegal practices is higher when PRP-DER is high, supporting Hypothesis 3a.

[Figure 1 near here]

Discussion and Conclusions

Executive compensation has drawn considerable attention, but there remains much disagreement about its role in preventing illegal actions (Conyon and He, 2012; Crutchley and Minnick, 2012; Devers et al., 2007). This may be due to the neglecting contextual factors, which may have impacts on the effects of the compensation system and the TMT's decision-making. Basing on the behavioral theory of the firm, this study empirically explored the effects of TMT compensation and aspiration–performance discrepancy on the likelihood of corporate illegal activities. In particular, it studied the moderating effect of aspiration–performance discrepancies on the relation between TMT compensation and corporate illegal behaviors. Using data on publicly traded construction companies in China from 2011 to 2017, this study tested the above hypotheses. Some of them are supported.

Though it first found TMT compensation has an insignificant impact on corporate illegal behaviors in Model 2, a significantly positive relationship between them was then obtained in Model 5 which also considers performance discrepancy. This finding verifies the

impact of situational factors on TMT compensation. This positive relationship corresponds to the notion that executive compensation may provide managers with incentives to improve the firm's short-term performance to maximize their interest at the expense of the firm's long-term growth (O'Connor et al., 2006; Peng and Röell, 2008). This finding is consistent with previous studies about the relationship between incentive compensation and fraudulent decisions (DuCharme et al., 2001; Harris and Bromiley, 2007; O'Connor et al., 2006).

Second, aspiration–performance discrepancy, especially when characterized as relative DER, was found to have influences on the likelihood of illegal activities. When performance is above aspiration, that is when DER is lower than the weighted industrial and historical level (i.e., NRP-DER), the firm is less likely to conduct violations. This is in line with the notion that the incidence of organizational change decreases when firms consider themselves successful (Fiegenbaum, 1990; Greve, 1998). To avoid anticipating a distant future, firms are willing to maintain a status quo and unwilling to change (Gavetti et al., 2012). They would rely on their standard operating procedures and prefer seeking in the neighborhood of current alternatives and solutions (Cyert and March, 1963). When performance is below aspiration (DER is above the acceptable level, i.e., PRP-DER), the probability of corporate wrongdoings is lower as relative DER increases, contrary to our expectation. This may be explained by the threat-rigidity effects generated by obvious failure (Gaba and Bhattacharya, 2012; Greve, 1998). Unsatisfactory performance, as a threat, may contribute to limited information processing, centralized decision making, strengthened organizational rigidity, narrow alternatives considered, and thus the decreasing likelihood of change (Staw et al., 1981). Subsequently, firms become averse to taking risks (Chattopadhyay et al., 2001). They would maintain their routines and be reluctant to take illegal activities.

Third, this research indicates that performance below aspirations (DER is higher than the desired level, i.e., PRP-DER) strengthens the effect of TMT compensation on illegal

behaviors. As TMT compensation increases, the incidence of illegal activities grows fast. It is higher for firms with lower relative performance (higher PRP-DER) if compensation climbs high enough. This may be associated with increasing incentives for changes. Managers are expected to lose much financially if performance is below the acceptable level. Considering that their desire to reduce losses overwhelms that to increase gains, managers may become greater risk-taking under strains such as performance shortfalls (Kahneman and Tversky, 1979). This corresponds to the idea under the behavioral theory that failing to attain a satisfactory outcome generates incentives for problematic search and some risky alternatives may be selected due to bounded rationality (Cyert and March, 1963; Gavetti et al., 2012). Executives might attempt to improve short-term performance and to avoid possible financial loss through illicit means.

Fourth, the insignificant effect of ROA on corporate illegal behaviors may be related to the pressure degree. ROA represents profitability, and making profits is a long-lasting activity. That is, performance below aspiration in a short period may not be urgent in the construction industry, in which the payback period is always longer than other service industries (Alfeld, 1988). Indeed, some construction firms would take some megaproject initiatives that are not in pursuit of rational economic benefits (Yang et al., 2018). Thus, ROA below or above the past level or the competitors' level may not provide strong incentives for TMTs and firms to commit some wrongdoings. On the other hand, DER shows the degree of debt versus wholly owned funds when a company is financing its operations. This variable reflects organizational slack, the stock of available resources that can be diverted or redeployed for an organization to achieve its goals (Arora and Dharwadkar, 2011; Kuusela et al., 2017). When DER is high (e.g., the current level in our samples), the debt-related agency cost would increase, and consequently, the cost of capital would increase. This, in turn, raises the pressure to improve the current status (Bertero and Rondi, 2000). Simultaneously, TMTs and firms may confront resource scarcities

and experience difficulties in adopting internal or external strategies (Bourgeois, 1981; Li et al., 2017). Then they may have heavy performance pressure and strong incentives to conduct a problematic search even via financial statement fraud and other illicit means (Finney and Lesieur, 1982; Vaughan, 1985, 1999). When DER is low, there is still organizational slack and abundant resources to enable firms to adopt strategic adjustments to achieve organizational goals (Arora and Dharwadkar, 2011; Li et al., 2017). There is no necessity and motivation to take any risky illegal activities, which may change the current success once these scandals are known by the public. However, the DER of construction industry has been relatively high as most firms are operated on borrowings (Rebeiz and Salameh, 2006; Roberts and Zurawski, 2016). Though there may be many reasons why a construction firm has high debt, high debt may result in undesirable consequences and activities, such as corporate scandals. Hence, construction firms need to pay more attention to DER.

This study has several practical implications. First, we confirm the contextual effect of aspiration–performance discrepancy on the relation of TMT compensation and corporate illegal activities. This implies that excessive executive pay does play a role in committing illegal activities when a firm faces a gap between goal and actual achievement. The design of executive compensation needs to be reconsidered by the compensation committee, which is responsible for design the reward structure and guaranteeing the executive compensation systems work effectively and equitably to protect shareholders' profits (Daily et al., 1998; Kolev et al., 2019; Laux and Laux, 2009). Using high total pay to align the interest of managers with firms might not be prudent to reduce the occurrence of corporate violations. In particular, there is no optimal compensation system for all organizations and/or all the time. The compensation system needs to alter to fit with the changing situational factors, such as aspiration-performance discrepancies. Second, while aspiration–performance discrepancy serves as a situational factor to moderate the association between compensation and corporate

violation, companies should carefully monitor TMT, especially when performance is lower than the desired level (e.g., DER is above historical and industrial aspiration). The significant influence of DER rather than ROA may bring new insights to decision makers (i.e., investors, lenders, and regulators) when evaluating firms' performance and considering preventing fraudulent activities. For construction firms in China, DER deserves more attention in suppressing illegal behaviors.

Though this study has significant theoretical and practical implications, several limitations exist. First, this research used the performance data before the year of initiating illegal behavior. It is implicitly assumed the fraudulent actions were taken one year after the unsatisfactory performance was detected. However, an aggressive manager may choose to violate options in the same year when signs of poor performance appear while a conservative manager may choose to ride the fence on unsatisfactory performance for years. Second, only TMT total pay was used to measure executive compensation. Though restricted stock, stock options, and long-term incentive plans are commonly treated as measures of compensation, they are seldom adopted in China, especially in the construction industry. Their effects on illegal corporate behaviors in this context may need further exploration. Third, a binary variable, operationalized by whether violations were committed by firms in a focal year, was used as the dependent variable. This study fails to measure the scale of the violating activity due to the mixed usage of multiple punishments by the regulators such as fine and cancellation of business license. Clearly defining the seriousness of illegal activities may be more meaningful and thus recommended for future studies.

References

Agnew, R., Piquero, N.L. and Cullen, F.T. (2009), "General strain theory and white-collar crime", in Simpson, S.S. and Weisburd, D. (Eds.), *The Criminology of White-Collar Crime*, Springer, New York, NY, pp. 35–60.

Aiken, L.S., West, S.G. and Reno, R.R. (1991), *Multiple Regression: Testing and Interpreting Interactions*, Sage Publications, Newbury Park, Calif.

Alfeld, L.E. (1988), *Construction Productivity: On-Site Measurement and Management*,

592 McGraw-Hill.
593 Al-Shaer, H. and Zaman, M. (2019), "CEO Compensation and Sustainability Reporting
594 Assurance: Evidence from the UK", *Journal of Business Ethics*, Vol. 158 No. 1, pp.
595 233–252.
596 Armstrong, C.S., Jagolinzer, A.D. and Larcker, D.F. (2010), "Chief executive officer equity
597 incentives and accounting irregularities", *Journal of Accounting Research*, Vol. 48 No.
598 2, pp. 225–271.
599 Arora, P. and Dharwadkar, R. (2011), "Corporate governance and corporate social
600 responsibility (CSR): The moderating roles of attainment discrepancy and organization
601 slack", *Corporate Governance: An International Review*, Vol. 19 No. 2, pp. 136–152.
602 Arthaud-Day, M.L., Certo, S.T., Dalton, C.M. and Dalton, D.R. (2006), "A changing of the
603 guard: Executive and director turnover following corporate financial restatements",
604 *Academy of Management Journal*, Vol. 49 No. 6, pp. 1119–1136.
605 Ashkanasy, N.M., Windsor, C.A. and Treviño, L.K. (2006), "Bad apples in bad barrels
606 revisited: Cognitive moral development, just world beliefs, rewards, and ethical
607 decision-making", *Business Ethics Quarterly*, Cambridge University Press, Vol. 16 No.
608 4, pp. 449–473.
609 Baucus, M.S. and Baucus, D.A. (1997), "Paying the piper: An empirical examination of longer-
610 term financial consequences of illegal corporate behavior", *Academy of Management*
611 *Journal*, Vol. 40 No. 1, pp. 129–151.
612 Baucus, M.S. and Near, J.P. (1991), "Can illegal corporate behavior be predicted? An event
613 history analysis", *Academy of Management Journal*, Vol. 34 No. 1, pp. 9–36.
614 Baum, J.A. and Dahlin, K.B. (2007), "Aspiration performance and railroads' patterns of
615 learning from train wrecks and crashes", *Organization Science*, Vol. 18 No. 3, pp. 368–
616 385.
617 Beltrão, L.M.P. and Carvalho, M.T.M. (2019), "Prioritizing Construction Risks Using Fuzzy
618 AHP in Brazilian Public Enterprises", *Journal of Construction Engineering and*
619 *Management*, Vol. 145 No. 2, p. 05018018.
620 Bertero, E. and Rondi, L. (2000), "Financial pressure and the behaviour of public enterprises
621 under soft and hard budget constraints: evidence from Italian panel data", *Journal of*
622 *Public Economics*, Vol. 75 No. 1, pp. 73–98.
623 Betts, M. and Wood-Harper, T. (1994), "Re-engineering construction: A new management
624 research agenda", *Construction Management and Economics*, Vol. 12 No. 6, pp. 551–
625 556.
626 Bhandari, L.C. (1988), "Debt/equity ratio and expected common stock returns: Empirical
627 evidence", *The Journal of Finance*, Vol. 43 No. 2, pp. 507–528.
628 Bourgeois, L. j. (1981), "On the Measurement of Organizational Slack", *Academy of*
629 *Management Review*, Academy of Management, Vol. 6 No. 1, pp. 29–39.
630 Brass, D.J., Butterfield, K.D. and Skaggs, B.C. (1998), "Relationships and unethical behavior:
631 A social network perspective", *Academy of Management Review*, Academy of
632 Management Briarcliff Manor, NY 10510, Vol. 23 No. 1, pp. 14–31.
633 Briscoe, F. and Safford, S. (2008), "The Nixon-in-China effect: Activism, imitation, and the
634 institutionalization of contentious practices", *Administrative Science Quarterly*, SAGE
635 Publications Sage CA: Los Angeles, CA, Vol. 53 No. 3, pp. 460–491.
636 Bromiley, P. and Harris, J.D. (2014), "A comparison of alternative measures of organizational
637 aspirations", *Strategic Management Journal*, Vol. 35 No. 3, pp. 338–357.
638 Brown, J. and Loosemore, M. (2015), "Behavioural factors influencing corrupt action in the
639 Australian construction industry", *Engineering, Construction and Architectural*
640 *Management*, Vol. 22 No. 4, pp. 372–389.
641 Carpenter, M.A. and Sanders, Wm.G. (2004), "The Effects of Top Management Team Pay and

642 Firm Internationalization on MNC Performance", *Journal of Management*, Vol. 30 No.
643 4, pp. 509–528.
644 Chan, A.P.C. and Owusu, E.K. (2017), "Corruption Forms in the Construction Industry:
645 Literature Review", *Journal of Construction Engineering and Management*, Vol. 143
646 No. 8, p. 04017057.
647 Chang, S.-J. and Chung, J. (2017), "A Quasi-experimental Approach to the Multinationality-
648 performance Relationship: An Application to Learning-by-exporting", *Global Strategy*
649 *Journal*, Vol. 7 No. 3, pp. 257–285.
650 Chattopadhyay, P., Glick, W.H. and Huber, G.P. (2001), "Organizational actions in response
651 to threats and opportunities", *Academy of Management Journal*, Vol. 44 No. 5, pp. 937–
652 955.
653 Chen, G., Firth, M. and Xu, L. (2009), "Does the type of ownership control matter? Evidence
654 from China's listed companies", *Journal of Banking & Finance*, Vol. 33 No. 1, pp.
655 171–181.
656 Chen, J., Cumming, D., Hou, W. and Lee, E. (2016), "CEO accountability for corporate fraud:
657 Evidence from the split share structure reform in China", *Journal of Business Ethics*,
658 Vol. 138 No. 4, pp. 787–806.
659 Christensen, D.M. (2016), "Corporate Accountability Reporting and High-Profile Misconduct",
660 *The Accounting Review*, Vol. 91 No. 2, pp. 377–399.
661 Cohan, W.D. (2009), *House of Cards: How Wall Street's Gamblers Broke Capitalism*, Penguin
662 UK.
663 Collins, J.D., Uhlenbruck, K. and Rodriguez, P. (2009), "Why firms engage in corruption: A
664 top management perspective", *Journal of Business Ethics*, Vol. 87 No. 1, pp. 89–108.
665 Conyon, M.J. and He, L. (2011), "Executive compensation and corporate governance in China",
666 *Journal of Corporate Finance*, Vol. 17 No. 4, pp. 1158–1175.
667 Conyon, M.J. and He, L. (2012), "CEO compensation and corporate governance in China",
668 *Corporate Governance: An International Review*, Vol. 20 No. 6, pp. 575–592.
669 Conyon, M.J. and He, L. (2016), "Executive compensation and corporate fraud in China",
670 *Journal of Business Ethics*, Vol. 134 No. 4, pp. 669–691.
671 Crutchley, C.E. and Minnick, K. (2012), "Cash versus incentive compensation: Lawsuits and
672 director pay", *Journal of Business Research*, Vol. 65 No. 7, pp. 907–913.
673 Cumming, D., Leung, T.Y. and Rui, O. (2015), "Gender Diversity and Securities Fraud",
674 *Academy of Management Journal*, Academy of Management, Vol. 58 No. 5, pp. 1572–
675 1593.
676 Cyert, R.M. and March, J.G. (1963), *A Behavioral Theory of the Firm*, Prentice-Hall,
677 Englewood Cliffs, N.J.
678 Daboub, A.J., Rasheed, A.M.A., Priem, R.L. and Gray, D.A. (1995), "Top management team
679 characteristics and corporate illegal activity", *Academy of Management Review*, Vol.
680 20 No. 1, pp. 138–170.
681 Daily, C.M., Johnson, J.L., Ellstrand, A.E. and Dalton, D.R. (1998), "Compensation
682 Committee Composition as a Determinant of CEO Compensation", *Academy of*
683 *Management Journal*, Academy of Management, Vol. 41 No. 2, pp. 209–220.
684 Dauth, T., Pronobis, P. and Schmid, S. (2017), "Exploring the link between internationalization
685 of top management and accounting quality: The CFO's international experience
686 matters", *International Business Review*, Vol. 26 No. 1, pp. 71–88.
687 Dawson, J.F. (2014), "Moderation in management research: What, why, when, and how",
688 *Journal of Business and Psychology*, Vol. 29 No. 1, pp. 1–19.
689 Desai, V.M. (2016), "The behavioral theory of the (governed) firm: Corporate board influences
690 on organizations' responses to performance shortfalls", *Academy of Management*
691 *Journal*, Vol. 59 No. 3, pp. 860–879.

692 Devers, C.E., Cannella, A.A., Reilly, G.P. and Yoder, M.E. (2007), "Executive compensation:
693 A multidisciplinary review of recent developments", *Journal of Management*, Vol. 33
694 No. 6, pp. 1016–1072.
695 Donaldson, L. (1996), "The normal science of structural contingency theory", in Clegg, S.R.,
696 Hardy, C. and Nord, W.R. (Eds.), *Handbook of Organization Studies*, Sage, London,
697 pp. 57–76.
698 DuCharme, L.L., Malatesta, P.H. and Sefcik, S.E. (2001), "Earnings management: IPO
699 valuation and subsequent performance", *Journal of Accounting, Auditing & Finance*,
700 Vol. 16 No. 4, pp. 369–396.
701 Easterbrook, F.H. (1984), "Two agency-cost explanations of dividends", *American Economic*
702 *Review*, Vol. 74 No. 4, pp. 650–659.
703 Edum-Fotwe, F., Price, A. and Thorpe, A. (1996), "A review of financial ratio tools for
704 predicting contractor insolvency", *Construction Management and Economics*, Vol. 14
705 No. 3, pp. 189–198.
706 Efendi, J., Srivastava, A. and Swanson, E.P. (2007), "Why do corporate managers misstate
707 financial statements? The role of option compensation and other factors", *Journal of*
708 *Financial Economics*, Vol. 85 No. 3, pp. 667–708.
709 Ege, M.S. (2015), "Does Internal Audit Function Quality Deter Management Misconduct?",
710 *The Accounting Review*, Vol. 90 No. 2, pp. 495–527.
711 Ferguson, M.F. and Shockley, R.L. (2003), "Equilibrium 'anomalies'", *The Journal of Finance*,
712 Vol. 58 No. 6, pp. 2549–2580.
713 Festinger, L. (1954), "A theory of social comparison processes", *Human Relations*, Vol. 7 No.
714 2, pp. 117–140.
715 Fiegenbaum, A. (1990), "Prospect theory and the risk-return association: An empirical
716 examination in 85 industries", *Journal of Economic Behavior & Organization*, Vol. 14
717 No. 2, pp. 187–203.
718 Finney, H.C. and Lesieur, H.R. (1982), "A contingency theory of organizational crime", in
719 Bacharach, S.B. (Ed.), *Research in the Sociology of Organizations*, JAI Press,
720 Greenwich, CT, pp. 255–299.
721 Firth, M., Fung, P.M.Y. and Rui, O.M. (2007), "How ownership and corporate governance
722 influence chief executive pay in China's listed firms", *Journal of Business Research*,
723 Vol. 60 No. 7, pp. 776–785.
724 Firth, M., Rui, O.M. and Wu, W. (2011), "Cooking the books: Recipes and costs of falsified
725 financial statements in China", *Journal of Corporate Finance*, Vol. 17 No. 2, pp. 371–
726 390.
727 Gaba, V. and Bhattacharya, S. (2012), "Aspirations, innovation, and corporate venture capital:
728 A behavioral perspective", *Strategic Entrepreneurship Journal*, Vol. 6 No. 2, pp. 178–
729 199.
730 Gavetti, G., Greve, H.R., Levinthal, D.A. and Ocasio, W. (2012), "The behavioral theory of
731 the firm: Assessment and prospects", *Academy of Management Annals*, Vol. 6 No. 1,
732 pp. 1–40.
733 Greve, H.R. (1998), "Performance, aspirations, and risky organizational change",
734 *Administrative Science Quarterly*, Vol. 43 No. 1, pp. 58–86.
735 Greve, H.R. (2003a), "A behavioral theory of R&D expenditures and innovations: Evidence
736 from shipbuilding", *Academy of Management Journal*, Vol. 46 No. 6, pp. 685–702.
737 Greve, H.R. (2003b), *Organizational Learning from Performance Feedback: A Behavioral*
738 *Perspective on Innovation and Change*, Cambridge University Press.
739 Greve, H.R., Palmer, D. and Pozner, J. (2010), "Organizations gone wild: The causes,
740 processes, and consequences of organizational misconduct", *The Academy of*
741 *Management Annals*, Vol. 4 No. 1, pp. 53–107.

Grossman, S.J. and Hart, O.D. (1983), "An Analysis of the Principal-Agent Problem", *Econometrica*, Vol. 51 No. 1, pp. 7–46.
Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2014), *Multivariate Data Analysis*, 7th ed., Pearson Education Limited, Essex.
Hambrick, D.C. and Mason, P.A. (1984), "Upper echelons: The organization as a reflection of its top managers", *Academy of Management Review*, Vol. 9 No. 2, pp. 193–206.
Hanlon, M., Rajgopal, S. and Shevlin, T. (2003), "Are executive stock options associated with future earnings?", *Journal of Accounting and Economics*, Vol. 36 No. 1, pp. 3–43.
Harris, J. and Bromiley, P. (2007), "Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation", *Organization Science*, Vol. 18 No. 3, pp. 350–367.
Hass, L.H., Tarsalewska, M. and Zhan, F. (2016), "Equity incentives and corporate fraud in China", *Journal of Business Ethics*, Vol. 138 No. 4, pp. 723–742.
Heavey, C. and Simsek, Z. (2017), "Distributed Cognition in Top Management Teams and Organizational Ambidexterity: The Influence of Transactive Memory Systems", *Journal of Management*, Vol. 43 No. 3, pp. 919–945.
Hill, C.W.L., Kelley, P.C., Agle, B.R., Hitt, M.A. and Hoskisson, R.E. (1992), "An Empirical Examination of the Causes of Corporate Wrongdoing in the United States", *Human Relations*, Vol. 45 No. 10, pp. 1055–1076.
Hitt, M.A., Gimeno, J. and Hoskisson, R.E. (1998), "Current and Future Research Methods in Strategic Management", *Organizational Research Methods*, Vol. 1 No. 1, pp. 6–44.
Ho, C.M. (2011), "Ethics management for the construction industry: A review of ethical decision-making literature", *Engineering, Construction and Architectural Management*, Vol. 18 No. 5, pp. 516–537.
Hou, W., Priem, R.L. and Goranova, M. (2017), "Does One Size Fit All? Investigating Pay–Future Performance Relationships Over the 'Seasons' of CEO Tenure", *Journal of Management*, Vol. 43 No. 3, pp. 864–891.
Iyer, D.N. and Miller, K.D. (2008), "Performance feedback, slack, and the timing of acquisitions", *Academy of Management Journal*, Vol. 51 No. 4, pp. 808–822.
Jensen, M.C. (1993), "The modern industrial revolution, exit, and the failure of internal control systems", *The Journal of Finance*, Vol. 48 No. 3, pp. 831–880.
Jensen, M.C. and Meckling, W.H. (1976), "Theory of the firm: Managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3 No. 4, pp. 305–360.
Jensen, M.C. and Murphy, K.J. (1990), "Performance pay and top-management incentives", *Journal of Political Economy*, Vol. 98 No. 2, pp. 225–264.
Johnson, S.A., Ryan, H.E. and Tian, Y.S. (2009), "Managerial incentives and corporate fraud: The sources of incentives matter", *Review of Finance*, Vol. 13 No. 1, pp. 115–145.
Jurkus, A.F., Park, J.C. and Woodard, L.S. (2011), "Women in top management and agency costs", *Journal of Business Research*, Vol. 64 No. 2, pp. 180–186.
Kahneman, D. and Tversky, A. (1979), "Prospect theory: An analysis of decision under risk", *Econometrica*, Vol. 47 No. 2, pp. 263–292.
Kolev, K.D., Wangrow, D.B., Barker, V.L. and Schepker, D.J. (2019), "Board Committees in Corporate Governance: A Cross-Disciplinary Review and Agenda for the Future", *Journal of Management Studies*, Vol. 56 No. 6, pp. 1138–1193.
Kulik, B.W. (2005), "Agency theory, reasoning and culture at Enron: In search of a solution", *Journal of Business Ethics*, Springer, Vol. 59 No. 4, pp. 347–360.
Kuusela, P., Keil, T. and Maula, M. (2017), "Driven by aspirations, but in what direction? Performance shortfalls, slack resources, and resource-consuming vs. resource-freeing organizational change", *Strategic Management Journal*, Vol. 38 No. 5, pp. 1101–1120.

Langton, L. and Piquero, N.L. (2007), "Can general strain theory explain white-collar crime? A preliminary investigation of the relationship between strain and select white-collar offenses", *Journal of Criminal Justice*, Vol. 35 No. 1, pp. 1–15.
Lant, T.K. (1992), "Aspiration level adaptation: An empirical exploration", *Management Science*, Vol. 38 No. 5, pp. 623–644.
Laux, C. and Laux, V. (2009), "Board committees, CEO compensation, and earnings management", *Accounting Review*, Vol. 84 No. 3, pp. 869–891.
Le, Y., Shan, M., Chan, A.P. and Hu, Y. (2014), "Investigating the causal relationships between causes of and vulnerabilities to corruption in the Chinese public construction sector", *Journal of Construction Engineering and Management*, Vol. 140 No. 9, p. 05014007.
Lee, C.J., Wang, R., Lee, C.Y., Hung, C.C.W. and Hsu, S.C. (2018), "Board structure and directors' role in preventing corporate misconduct in the construction industry", *Journal of Management in Engineering*, Vol. 34 No. 2, p. 04017067.
Levitt, B. and March, J.G. (1988), "Organizational learning", *Annual Review of Sociology*, Vol. 14 No. 1, pp. 319–338.
Li, D., Cao, C., Zhang, L., Chen, X., Ren, S. and Zhao, Y. (2017), "Effects of corporate environmental responsibility on financial performance: The moderating role of government regulation and organizational slack", *Journal of Cleaner Production*, Vol. 166, pp. 1323–1334.
Li, P.-Y. (2018), "Top management team characteristics and firm internationalization: The moderating role of the size of middle managers", *International Business Review*, Vol. 27 No. 1, pp. 125–138.
Lu, J. and Shi, Z. (2018), "Does improved disclosure lead to higher executive compensation? Evidence from the conversion to IFRS and the dual-class share system in China", *Journal of Corporate Finance*, Vol. 48, pp. 244–260.
Lu Weisheng, Ye Meng, Flanagan Roger and Ye Kunhui. (2016), "Corporate Social Responsibility Disclosures in International Construction Business: Trends and Prospects", *Journal of Construction Engineering and Management*, Vol. 142 No. 1, p. 04015053.
March, J.G. and Shapira, Z. (1987), "Managerial perspectives on risk and risk taking", *Management Science*, Vol. 33 No. 11, pp. 1404–1418.
March, J.G. and Simon, H.A. (1958), *Organizations.*, Wiley, New York.
Margaritis, D. and Psillaki, M. (2010), "Capital structure, equity ownership and firm performance", *Journal of Banking & Finance*, Vol. 34 No. 3, pp. 621–632.
McNamara, G. and Bromiley, P. (1999), "Risk and return in organizational decision making", *Academy of Management Journal*, Vol. 42 No. 3, pp. 330–339.
Milgrom, P. and Roberts, J. (1988), "An Economic Approach to Influence Activities in Organizations", *American Journal of Sociology*, The University of Chicago Press, Vol. 94, pp. S154–S179.
Minor, D. B. 2016. Executive compensation and misconduct: environmental harm. Working Paper no. 16-076, Harvard Business School, Boston, MA.
Mishina, Y., Dykes, B.J., Block, E.S. and Pollock, T.G. (2010), "Why 'good' firms do bad things: The effects of high aspirations, high expectations, and prominence on the incidence of corporate illegality", *Academy of Management Journal*, Vol. 53 No. 4, pp. 701–722.
Nyberg, A.J., Fulmer, I.S., Gerhart, B. and Carpenter, M.A. (2010), "Agency theory revisited: CEO returns and shareholder interest alignment", *The Academy of Management Journal*, Vol. 53 No. 5, pp. 1029–1049.
O'Brien, J.P. and David, P. (2014), "Reciprocity and R&D search: Applying the behavioral theory of the firm to a communitarian context", *Strategic Management Journal*, Vol.

35 No. 4, pp. 550–565.
O'Connor, J.P., Priem, R.L., Coombs, J.E. and Gilley, K.M. (2006), "Do CEO stock options prevent or promote fraudulent financial reporting?", *Academy of Management Journal*, Vol. 49 No. 3, pp. 483–500.
Peng, L. and Röell, A. (2008), "Manipulation and equity-based compensation", *American Economic Review*, Vol. 98 No. 2, pp. 285–290.
Pfeffer, J. (1983), "Organizational demography", *Research in Organizational Behavior*, JAI Press, Greenwich, CT.
Rebeiz, K.S. and Salameh, Z. (2006), "Relationship between governance structure and financial performance in construction", *Journal of Management in Engineering*, Vol. 22 No. 1, pp. 20–26.
Rhee, L., Ocasio, W. and Kim, T.-H. (2019), "Performance Feedback in Hierarchical Business Groups: The Cross-Level Effects of Cognitive Accessibility on R&D Search Behavior", *Organization Science*, Vol. 30 No. 1, pp. 51–69.
Roberts, I. and Zurawski, A. (2016), "Changing patterns of corporate leverage in China: evidence from listed companies", *China's New Sources of Economic Growth: Vol. 1. ——Reform, Resources and Climate Change*, Australian National University Press, Australia, pp. 271–312.
Roh, J., Krause, R. and Swink, M. (2016), "The appointment of chief supply chain officers to top management teams: A contingency model of firm-level antecedents and consequences", *Journal of Operations Management*, p. 14.
Rowley, T.J., Shipilov, A.V. and Greve, H.R. (2017), "Board reform versus profits: The impact of ratings on the adoption of governance practices", *Strategic Management Journal*, Vol. 38 No. 4, pp. 815–833.
Saenz, C. and Brown, H. (2018), "The disclosure of anticorruption aspects in companies of the construction sector: Main companies worldwide and in Latin America", *Journal of Cleaner Production*, Vol. 196, pp. 259–272.
Sahaym, A., Cho, S.Y., Kim, S.K. and Mousa, F.-T. (2016), "Mixed blessings: How top management team heterogeneity and governance structure influence the use of corporate venture capital by post-IPO firms", *Journal of Business Research*, Vol. 69 No. 3, pp. 1208–1218.
Schmukler, S.L. and Vesperoni, E. (2006), "Financial globalization and debt maturity in emerging economies", *Journal of Development Economics*, Vol. 79 No. 1, pp. 183–207.
Schnatterly, K., Gangloff, K.A. and Tuschke, A. (2018), "CEO wrongdoing: A review of pressure, opportunity, and rationalization", *Journal of Management*, Vol. 44 No. 6, pp. 2405–2432.
Schneider, S.L. (1992), "Framing and conflict: aspiration level contingency, the status quo, and current theories of risky choice.", *Journal of Experimental Psychology. Learning, Memory, and Cognition*, Vol. 18 No. 5, pp. 1040–1057.
Sharma, V.D. (2004), "Board of Director Characteristics, Institutional Ownership, and Fraud: Evidence from Australia", *Auditing: A Journal of Practice & Theory*, Vol. 23 No. 2, pp. 105–117.
Shen, W. and Lin, C. (2009), "Firm profitability, state ownership, and top management turnover at the listed firms in China: A behavioral perspective", *Corporate Governance: An International Review*, Vol. 17 No. 4, pp. 443–456.
Shi, W., Connelly, B.L. and Hoskisson, R.E. (2017), "External corporate governance and financial fraud: cognitive evaluation theory insights on agency theory prescriptions", *Strategic Management Journal*, Vol. 38 No. 6, pp. 1268–1286.
Shi, W., Connelly, B.L. and Sanders, W.G. (2016), "Buying bad behavior: Tournament incentives and securities class action lawsuits", *Strategic Management Journal*, Vol.

892 37 No. 7, pp. 1354–1378.
893 Signor Regis, Love Peter E. D. and Olatunji Oluwole. (2016), "Determining Overpricing in
894 Brazilian Infrastructure Projects: A Forensic Approach", *Journal of Construction*
895 *Engineering and Management*, Vol. 142 No. 9, p. 06016001.
896 Silvestre, B.S., Monteiro, M.S., Viana, F.L.E. and de Sousa-Filho, J.M. (2018), "Challenges
897 for sustainable supply chain management: When stakeholder collaboration becomes
898 conducive to corruption", *Journal of Cleaner Production*, Vol. 194, pp. 766–776.
899 Simpson, S.S. (2002), *Corporate Crime, Law, and Social Control*, Cambridge University Press,
900 New York.
901 Staw, B.M., Sandelands, L.E. and Dutton, J.E. (1981), "Threat rigidity effects in organizational
902 behavior: A multilevel analysis", *Administrative Science Quarterly*, Vol. 26 No. 4, pp.
903 501–524.
904 Strand, R. (2013), "The Chief Officer of Corporate Social Responsibility: A Study of Its
905 Presence in Top Management Teams", *Journal of Business Ethics*, Vol. 112 No. 4, pp.
906 721–734.
907 Tosi, H.L. and Gomez-Mejia, L.R. (1994), "CEO Compensation Monitoring and Firm
908 Performance", *The Academy of Management Journal*, Vol. 37 No. 4, pp. 1002–1016.
909 Transparency International. (2005). *Global corruption report 2005*. Pluto Press.
910 <https://www.transparency.org/whatwedo/publication/global_corruption_report_2005
911 _corruption_in_construction_and_post_conflict> (Jan. 13, 2019)
912 Transparency International. (2008), "Bribe Payers Index 2008", available at:
913 https://www.transparency.org/research/bpi/bpi_2008/0 (accessed 18 April 2019).
914 Troy, C., Smith, K.G. and Domino, M.A. (2011), "CEO demographics and accounting fraud:
915 Who is more likely to rationalize illegal acts?", *Strategic Organization*, Vol. 9 No. 4,
916 pp. 259–282.
917 Vaughan, D. (1985), *Controlling Unlawful Organizational Behavior: Social Structure and*
918 *Corporate Misconduct*, University of Chicago Press, Chicago.
919 Vaughan, D. (1999), "The dark side of organizations: Mistake, misconduct, and disaster",
920 *Annual Review of Sociology*, Vol. 25 No. 1, pp. 271–305.
921 Vissa, B., Greve, H.R. and Chen, W.-R. (2010), "Business Group Affiliation and Firm Search
922 Behavior in India: Responsiveness and Focus of Attention", *Organization Science*, Vol.
923 21 No. 3, pp. 696–712.
924 Wang, R., Lee, C.J., Hsu, S.C. and Lee, C.Y. (2018), "Corporate misconduct prediction with
925 support vector machine in the construction industry", *Journal of Management in*
926 *Engineering*, Vol. 34 No. 4, p. 04018021.
927 Wiersema, M.F. and Bantel, K.A. (1992), "Top Management Team Demography and
928 Corporate Strategic Change", *The Academy of Management Journal*, Vol. 35 No. 1, pp.
929 91–121.
930 Williams, R.J. and Barrett, J.D. (2000), "Corporate philanthropy, criminal activity, and firm
931 reputation: Is there a link?", *Journal of Business Ethics*, Vol. 26 No. 4, pp. 341–350.
932 Wowak, A.J., Mannor, M.J. and Wowak, K.D. (2015), "Throwing caution to the wind: The
933 effect of CEO stock option pay on the incidence of product safety problems", *Strategic*
934 *Management Journal*, Vol. 36 No. 7, pp. 1082–1092.
935 Xu, X.D., Zeng, S.X., Zou, H.L. and Shi, J.J. (2016), "The impact of corporate environmental
936 violation on shareholders' wealth: A perspective taken from media coverage", *Business*
937 *Strategy and the Environment*, Vol. 25 No. 2, pp. 73–91.
938 Yang, D., He, Q., Cui, Q. and Hsu, S.C. (2018), "Organizational citizenship behavior in
939 construction megaprojects", *Journal of Management in Engineering*, Vol. 34 No. 4, p.
940 04018017.
941 Yang, Z., Zhang, H. and Xie, E. (2017), "Performance feedback and supplier selection: A

perspective from the behavioral theory of the firm", *Industrial Marketing Management*, Vol. 63 No. Supplement C, pp. 105–115.
Yoo, J.W. and Reed, R. (2015), "The Effects of Top Management Team External Ties and Board Composition on the Strategic Choice of Late Movers", *Long Range Planning*, Vol. 48 No. 1, pp. 23–34.
Zahra, S.A., Priem, R.L. and Rasheed, A.A. (2005), "The antecedents and consequences of top management fraud", *Journal of Management*, Vol. 31 No. 6, pp. 803–828.
Zaleska, M. (1976), "Majority Influence on Group Choices Among Bets", *Journal of Personality and Social Psychology*, Vol. 33 No. 1, pp. 8–17.
Zhang, X., Li, N., Ullrich, J. and van Dick, R. (2015), "Getting everyone on board: The effect of differentiated transformational leadership by CEOs on top management team effectiveness and leader-rated firm performance", *Journal of Management*, Vol. 41 No. 7, pp. 1898–1933.
Zott, C. and Amit, R. (2007), "The fit between product market strategy and business model: implications for firm performance", p. 26.