Mutual Monitoring: How TMT Faultlines Affect Corporate Financial Fraud

Abstract

We develop and test a theoretical model to investigate the effects of faultlines within the top management team (TMT) on corporate financial fraud. We propose that TMT faultlines can generate mutual monitoring among factional subgroups in the executive suite, which reduces fraudulent behavior. We also examine the contingent roles of subgroup configuration and TMT members' tenure overlapping in shaping the relationship between TMT faultlines and financial fraud. The mutual monitoring effect is likely to be stronger when the TMT has a balanced subgroup configuration and shorter TMT members' tenure overlapping. We test our argument in the context of publicly listed firms in China. This paper extends the mutual monitoring perspective of corporate governance and has important research implications for corporate financial fraud literature.

Keywords

Mutual monitoring · Faultlines · Top management team · Corporate financial fraud

1. Introduction

Corporate financial fraud is unethical wrongdoings undertaken by managers to get private benefits and avoid fiduciary duties, which causes financial loss to shareholders, breaches stakeholders' trust, and increases financial market instability (Conyon and He, 2016; Khanna et al., 2015). Research has primarily relied on agency theory (Berle and Means, 1932) and emphasized a set of internal mechanisms (e.g., the board of directors, incentive payments, ownership concertation, etc.) and external mechanisms (e.g., activist owners, the market for corporate control, securities analysts, etc.) to monitor managers and deter them from acting opportunistically and engaging in financial fraud (Daily et al., 2003; Martin et al., 2019).

Agency theory views managers as a unified coalition that counters with these disciplinary forces (Fama and Jensen, 1983; Jensen and Meckling, 1976). The literature on upper echelons, however, has recognized the various internal social interactions within TMTs (Certo et al., 2006; Hambrick and Mason, 1984) and delved into the effects of TMT composition on managerial attitudes, cognitions, behaviors, as well as firm outcomes (Chen, Yang, and Jing, 2015; Eisenhardt et al., 1997; Knight et al., 1999; Richard et al., 2019).

Combining top managers' demographic compositions with agency theory (Li and Hambrick, 2005), our investigation focuses on TMT faultlines and explores the effects of TMT faultlines on firms' financial frauds. TMT faultline is a term to describe the configuration of TMT and is a hypothetical dividing line that splits a team into several homogeneous subgroups based on individual members' alignment along multiple demographic or non-demographic attributes (Lau and Murnighan, 1998; Li and Hambrick, 2005).

This paper proposes that TMT faultlines trigger distrust and conflicts and divide the TMT into factional subgroups, which, in turn, induce mutual monitoring among factions and help to deter financial fraud (Eisenhardt et al., 1997; Knight et al., 1999). Mutual monitoring raises when one party of agents is able to audit another party's activities and measure their performance (Arnold, Hannan, and Tafkov, 2020; Carpenter, 2007). Fama and Jensen (1983) state that agents can easily acquire information about

their peers' activities when fulfilling their managerial roles. The embedded working relationship among TMT members make information more transparent to each other compared with external actors, such as independent directors. Either party's engagement in opportunism will be detected by others via information transmission within the formal and/informal channels (Guo et al., 2022; Li, 2014; Jones, Hesterly, and Borgatti, 1997). Thus, "mutual monitoring systems tap this information for use in the control process" (Fama and Jensen, 1983: 310).

China presents a particularly suitable context for studying faultlines and subgroup conflicts. Cliques and factions are prevalent phenomena in Chinese society (Horak et al., 2020). These phenomena reflect the deep-seated characteristics of interpersonal relationships in Chinese society, where "love" and trust exist within homogeneous factional subgroups and "hate" and conflict outside the subgroups (Chen et al., 2017; Choi and Sy, 2010; Lau and Murnighan, 1998; Li and Hambrick, 2005; Zhang and Chen, 2023). It is thus both theoretically and practically meaningful to examine how TMT faultlines and resulting factional subgroups can influence managerial opportunism among Chinese firms.

The paper thus makes three significant contributions. First, it contributes to corporate governance literature by uncovering the TMT configuration to form a mutual monitoring perspective on corporate governance. Much corporate governance research is posited on the notion that the management acts as a coalition. Limited studies have explored the possibility that the management crack may be shaped by conflictive and even antagonistic TMT members, which generates confrontations and potential mutual monitoring within the management team. Although these studies (e.g., Guo et al., 2022; Li, 2014) enlighten us with the potential of mutual monitoring in the executive suite (Rediker and Seth, 1995), they neglect the influence of the complex composition and dynamic social interaction processes within the executive team and governance outcomes. This paper thus advances this line of research and argues that faultlines in the executive suite complement traditional internal monitoring and control functions (e.g., the board of directors, incentive payments) in promoting greater managerial

accountability.

Second, we advance faultline theory by uncovering the role of TMT faultlines as a governance mechanism. Extant faultline literature is underpinned by the social categorization perspective and the information/decision-making perspective (van Knippenberg et al., 2004; Williams and O'Reilly, 1998). Beyond these two traditional perspectives, we integrate faultlines theory with corporate governance literature and argue that faultlines and the resulting factions within TMTs generate mutual monitoring between factional subgroups. According to the social categorization perspective, mistrust and intensified conflict between subgroups may lead to undesirable consequences such as poor social integration and decision-making outcomes (Li and Hambrick, 2005; Rico et al., 2007). We argue that conflicts between factional subgroups can paradoxically enhance internal governance by fostering mutual monitoring, ultimately reducing financial fraud. Moreover, in contrast to the information/decision-making perspective which emphasizes task-related information exchange and processing between subgroups, this study argues that subgroups also engage in covert information collection and investigation, serving as additional evidence of mutual constraints.

Third, we construct a framework to examine the condition under which TMT faultlines can generate stronger governance effects. Faultline literature has suggested that structural and temporal dynamics have important contingent effects on TMT demographic faultlines and organizational outcomes (Beckman and Burton, 2011; Carton and Cummings, 2012; Mäs et al., 2013). To deepen the understanding of the complex social interaction processes within the executive team and their impacts on corporate governance outcomes, we further examine the influence of TMT faultlines on corporate financial fraud by using the subgroup's configuration (structural element) and TMT members' tenure overlapping (temporal element) as moderators. As such, this paper deepens the understanding of the boundary conditions under which TMT faultlines may act as an effective mutual monitoring mechanism.

2. Theoretical background and hypothesis development

2.1. Corporate financial fraud governance: Mutual monitoring perspective

Corporate financial fraud research is primarily underpinned by agency theory and discusses the agency relationship raised by the separation of ownership and control (Jensen and Meckling, 1976). Under the agency relationship, managers act as self-interested opportunists and may engage in unethical actions inconsistent with maximizing shareholder interests (Fama and Jensen, 1983). The agency relationship is assumed to be inevitable and universal to all forms of corporate organization (Filatotchev et al., 2013). Therefore, a set of organizational practices has been conceived to monitor and restrain managerial opportunism and fraudulent behavior. Researchers, for instance, have emphasized the monitoring function of boards of directors (Daily et al., 2003), supervisory boards (Cromme, 2005), or large outside shareholders (Tihanyi et al., 2003). In addition, well-designed incentive schemes may help align the interests of agents and principals (Steinbach et al., 2017).

The theoretical assumptions made by agency theory exclusively focus on the bilateral contracts between principals and agents (Aguilera and Jackson, 2003). Scholars have already acknowledged principals' diversity and observed that different types of principals, such as banks, institutional investors, and families, pursue diverse interests (Daily et al., 2003; David et al., 1998). However, the question of the effects of varied agents on corporate governance and fraud has been left unexplored. Stewardship theorists challenge agency theory's characterization of agents as opportunistic and inherently untrustworthy by suggesting that agents act as a group of moral stewards who endeavor to serve the principals' interests (Davis et al., 1997; Fox and Hamilton, 1994). This theoretical aspect, however, still retains a rigid view of the agent as a unified group.

Extant corporate governance research gives no serious attention to the varied interests of managers. Top managers are multiple-domain players whose interests, behavior, and actions are unlikely to be homogeneous (Certo et al., 2006; Hambrick, 2007). Upper echelons researchers have long delved into the cognitions and social interactions within TMT and their consequent actions (Carpenter et al., 2004; Hambrick, 2007; Hambrick et al., 2015), suggesting that managers are not an undivided group in which potential cliques and conflicts exist within the executive team (Greening and Johnson,

1997; Ndofor et al., 2015). Hence, we argue that corporate governance requires an additional view that shifts from the principal–agency dichotomy to the agency–agency perspective on corporate governance.

Unlike the principal-agent control system, mutual monitoring refers to the reciprocal assessment of performance among individuals working on common tasks whose contributions are evaluated and rewarded by a firm on the basis of a collective outcome (Welbourne et al., 1995). Mutual monitoring therefore deemphasizes dependence on external governance (e.g., independent directors) and formal authority (i.e., ownership concentration), but places control in the hands of peer agents. Li (2014) asserts that the TMT is not a unified team, and members of the TMT can voice their concerns regarding CEO's self-serving, fraudulent, or unethical behavior towards other employees or the board, which generates the factual mutual monitoring within the TMT. Guo et al. (2022) assert that leaders of two inconsistent hierarchies may challenge each other's authority. As potential successors for the CEO, other members within the TMT are motivated to look for contestation opportunities and challenge the CEO's decisions. The competition for firms' control may incentivize executives to monitor each other.

Compared to the abovementioned studies and power dynamics literature (Joseph et al., 2014; Ocasio, 1994; Shen and Cannella, 2002), this paper does not oppose CEO with other top management team members, rather it focuses on the reciprocal assessment between/among factional subgroups within the TMT. In other words, mutual monitoring prevents agents pursue their self-interests because other agents can evaluate the outcome of those collaborative processes and organizational outcomes (Li et al., 2017).

2.2. Faultline theory

Faultlines theory provides a perspective to delve into social interactions within the executive team. Lau and Murnighan (1998) used the term "faultlines", inspired by geological faults, to define the potential factions within a focal group and argued that there are hypothetical lines that split the group into subgroups based on multiple demographic attributes. Managerial faultlines occur when salient demographic

characteristics exist and can be aligned across the team members (Li and Cui, 2018). Demographic characteristics act as the key indicators for team members' cognitive styles, values, and other psychological bases (Jackson, 1992; Jehn et al., 1999). The alignment of multiple demographic characteristics provides solid explanations for the effect of micro-level individual attributes on group-level outcomes (Thatcher and Patel, 2012).

Extant faultline literature has relied on social categorization perspective and the information/decision-making perspective (van Knippenberg et al., 2004; Williams and O'Reilly, 1998). These perspectives differ in their views on whether TMT faultlines enhance or hinder firm performance and outcomes. According to social categorization theory (Turner, 1982), TMT faultlines are suggested to drive the formation of social identity-based subgroups and, therefore, trigger social categorization processes (van Knippenberg et al., 2004; Kalra and Szymanski, 2023). People tend to classify individuals into different social categories based on demographic characteristics (e.g., gender, age, ethnicity, occupation) (Ashforth and Mael, 1989). Once social categories and identities are established, members tend to trust and hold positive attitudes toward "in-group" members while exhibiting hostile and negative attitudes toward "out-group" members (Tajfel, 1978). Another stream of literature highlights the beneficial effects of faultlines based on the information/decision-making perspective, focusing on the process of information elaboration. Dissimilarity among multiple subgroups provides a broader range of knowledge and perspectives, which is critical for TMTs tackling non-routine, knowledge-intensive tasks (Cooper et al., 2014; van Knippenberg et al., 2011).

Recent literature further explores the structural and temporal effects of TMT demographic faultlines (Beckman and Burton, 2011; Carton and Cummings, 2012; Mäs et al., 2013). Structural factors are reflected in various aspects, such as team roles and power structures (Ma et al., 2022), and subgroup structures within teams (Carton and Cummings, 2012; 2013). Structural factors often embed the patterns of interaction within teams, providing a more nuanced understanding of the mechanisms underlying TMT faultlines. Temporal factors are recognized as another critical mechanisms

influencing the effects of TMT demography (Beckman and Burton, 2011). Extant studies have pointed out that as people acquire more information over time, the formation of their perceptions may be based on different demographic characteristics (Harrison et al., 1998; 2002). Consequently, TMT faultlines formed based on specific demographic characteristics may exhibit varying impacts as time progresses.

2.3. TMT faultlines and corporate financial fraud

Corporate financial fraud occurs when managers deliberately act to deceive investors or other stakeholders (Gande and Lewis, 2009). It involves concealing company information, falsifying the firm's performance, or covering up systematic problems (Shi et al., 2017). Corporate financial fraud occurs because of information asymmetry and intrinsic conflicts between the shareholders and management, where management may intend to increase their compensation through the appearance of improved performance (Yiu et al., 2019). Agency theory suggests that internal governance mechanisms (e.g., activist large-block shareholders, boards of directors, auditing) can deter top managers from acting opportunistically and reduce financial fraud (Jia et al., 2009).

We argue that managerial faultlines generate conflicts within the top executive suite and can decrease the incidence of corporate financial fraud. Corporate financial fraud requires either coordination within the TMT, where all top executives are involved in criminal activities, or acquiescence, where some top executives witness the wrongdoing but are reluctant to "blow the whistle" (Khanna et al., 2015). However, faultlines split the TMT into factional groups, and top executives may hold hostility toward members outside their own faction (Ashforth and Mael, 1989). Managerial faultlines, therefore, lead to greater chasms within the TMT, where factional subgroups compete with each other (Antino et al., 2019; Halevy, 2008). The competitive nature of interaction may restraint gainsharing between subgroups, and each group is committed to achieving its own gains (Kilduff et al., 2010; Welbourne et al. 1995). The competition orientation reduces each faction's motivations to coordinate together (Lau and Murnighan, 2005) and generate mutual monitoring between subgroups (Bezrukova et al., 2016). Mutual monitoring acts as an effective mechanism to detect hidden unethical

actions, as factional subgroups observe and control each other's actions (Guo et al., 2022) and seek opportunities to challenge decisions made by their counterparts (Zorn et al., 2017). The agents, therefore, should be considered as a unit of analysis rather than as unified actors, frozen in interests and actions and isolated from the organizational context.

Under the circumstance where top executives are suspicious about certain activities and anticipate wrongdoing, the competition relationships could increase their willingness to express concerns (Thatcher and Patel, 2014; Zhang et al., 2021). All TMT members have substantial influence and explicit legal authority within the firm to obtain information and direct corporate behavior (Krause et al., 2022). TMT members' familiarity with the "contextual environment" reduces information asymmetry and enables them to detect early signs of fraud (Ndofor et al., 2015). Therefore, we argue that managerial faultlines restrain corporate financial fraud because TMT members have relatively symmetric and balanced information to help deter fraud (Xue et al., 2024). The conflicts and competition between factional groups motivate top executives to investigate and expose possible wrongdoing. Knowing that the rival faction is watching closely, TMT members can become more alert and hesitant to take fraud actions (Zorn et al., 2017). We thus contend that TMT faultlines may generate mutual monitoring within the TMT, which can impinge on top managers' feelings of autonomy and crowd out their intrinsic motivation for acting opportunistically. We thus propose:

Hypothesis 1*. TMT faultlines are negatively associated with the likelihood of corporate financial fraud.*

2.4. Faultlines and corporate financial fraud: A contingency perspective on subgroup configurations and tenure overlapping

TMT faultlines represent the intensity of a team being divided into subgroups, and subgroup configuration refers to the power structure of the TMT. Subgroup balance, as an indicator of subgroup configuration, refers to the balance of power between different subgroups within a team (Menon and Phillips, 2011; O'Leary and Mortensen, 2010). The faultline may divide the team into subgroups with varied configurations (Lau and Murnighan, 1998). Varied configurations endow each subgroup with different levels of

power (Carton and Cummings, 2012, 2013). Faultline studies suggest that the subgroups' power balance is determined by the size of each subgroup within the focal team. For example, an 8-person team can be divided into a 2-6 subgroup configuration, which is imbalanced, or a 4-4 subgroup configuration, which is balanced. Team members may experience different group interactions in the balanced vs. imbalanced subgroup configurations (O'Leary and Mortensen, 2010).

Balanced configurations are more likely to create a balance of power among factions within the TMT. When power is balanced between subgroups within the TMT, TMT faultlines can effectively reduce the likelihood of financial fraud. TMT faultline divides the TMT into distinct and differentiated subgroups, and balanced configuration cultivates and intensifies competition within the TMT (Kilduff et al., 2010). When factional subgroups confront antagonistic situations, no one is willing to compromise and retreat due to the balance of power (Cramton and Hinds, 2004; Spell et al., 2011). Furthermore, the competitive relationship between balanced factional subgroups motivates each party to monitor the others closely. In a balanced configuration, therefore, the effects of faultline on reducing corporate financial fraud is likely to be strengthened due to intensified competition and balanced power between factional subgroups.

In an imbalanced configuration, by contrast, the larger faction is generally in a dominant position, while the smaller faction is in a disadvantageous position to challenge and compete with the larger one. The larger the faction, the greater its power and the greater the possibility of representing the whole TMT (Hogg et al., 2012; Qi et al., 2022). In an imbalanced configuration, the larger factional subgroup is more likely to use its size advantages to take charge of validating and processing information (Bunderson and Reagans, 2011). Under the situation where the larger subgroup that includes more TMT members intends to engage in unlawful activities, the effects of faultline on reducing fraud is weakened as fraudulent information can easily be processed due to the group's greater power (Menon and Phillips, 2011).

Hence, we argue that subgroup configuration can moderate the relationship between TMT faultlines and the likelihood of corporate financial fraud. A balanced

configuration enhances the negative effects of TMT faultlines on corporate financial fraud. We thus hypothesize:

Hypothesis 2. *TMT subgroup configuration moderates the relationship between TMT faultlines and corporate financial fraud. Specifically, a balanced subgroup configuration enhances the negative effects of TMT faultlines on corporate financial fraud.*

TMT tenure is viewed as a temporal representation of TMT faultlines (Beckman and Burton, 2011). TMT members' tenure overlap is defined as the amount of time TMT members have worked together in focal firms. Our focus on tenure overlapping is motivated by interpersonal relations literature (e.g., Cumming, 2004; Nahapiet and Goshal, 1998), which suggest linkages between people are more likely to bonded as the frequency with which they interact. Common job tenure reinforces associability and trust, which in turn fosters collaboration (Harris et al., 2012).

Extant demographic research has addressed the important role of tenure overlap in shaping a team's composition and its effects (Georgakakis et al., 2017; Mathieu et al., 2008). Prior research has suggested that social interaction processes change over time. Team members initially have "homophilous selection of interaction partners" (Lau and Murnighan, 1998) and tend to categorize themselves based on superficial and observable demographic characteristics (e.g., gender, age, race, etc.). However, as members interact and become more familiar with each other, the importance of the demographics that initially dominated the team's social categorization gradually decreases. By contrast, the effects of deep diversity (e.g., attitudes, personality, values, etc.) become more significant (Chatman and Flynn, 2001; Harrison et al., 2002). For example, Barkema and Shvyrkov (2007) suggest that demographic characteristics serve as the initial basis for social classification, and team members with the same demographic characteristics tend to form subgroups. However, as members interact more deeply and obtain more personal information, the significance of demographic differences between subgroups is reduced, and relationship conflict between subgroups diminishes. Mäs et al. (2013) examine the changes in a team's faultlines over time and suggest that the initial polarization and conflicts within the team will be reduced by the "crisscrossing" actors in the long term.

Therefore, we argue that TMT members' tenure overlap weakens the relationship between TMT faultline and corporate financial fraud. TMT members' tenure overlap allows the development of interpersonal trust and psychological commitment within the TMT (Buyl et al., 2010). TMT faultlines may initially deter top executives' interaction (Barkema and Shvyrkov, 2007; Chatman and Flynn, 2001; Harrison et al., 2002). Following longer tenure overlapping, however, TMT members become more familiar with each other (Lau and Murnighan, 1998). Familiarity in the executive suite is likely to cultivate "groupthink" (Janis, 1972). In other words, TMT members who have spent longer time working together may develop group cohesion and establish common perceptions about their tasks (Mathieu et al., 2000).

TMT members' tenure overlapping contributes to "groupthink" and the tendency toward unanimity within the TMT (Buyl et al., 2010). Mutual monitoring of financial fraud generated by TMT faultlines might be weakened by long-time shared working experiences and collaborative relationships because overlapping experiences tend to generate mutual support and trust (Taylor and Greve, 2006). The longer the TMT members' tenure overlap, the closer the mental bond is, and less effective the mutual monitoring can reduce financial fraud. Such reasoning would imply a tenure overlapping to weaken the effects of TMT faultlines on corporate financial fraud. Hence, our next hypothesis runs as follows:

Hypothesis 3. TMT members' tenure overlap moderates the relationship between TMT faultlines and corporate financial fraud. Specifically, longer tenure overlapping weakens the negative effects of TMT faultlines on corporate financial fraud.

3. Method

3.1. Sample and data

We drew the initial sample from all public-listed firms in the Shanghai Stock Exchange and Shenzhen Stock Exchange between 2000 and 2018. Financial data was drawn from the CSMAR (China Stock Market & Accounting Research Database). Firms in the financial services sector were removed because such firms are under more stringent governance, and the context of their violations can be quite different from that of other sectors. We then obtained information about the top managers and board of

directors from CSMAR. Firms with missing information on top managers and boards of directors were removed from the sample. The violation data was obtained from the same database, which provides comprehensive information regarding violations of all public firms, such as the type of violations, actions from authorities, and specific penalties. In our final sample, there are 4,904 observations from 1,097 firms.

3.2. Variables

3.2.1. Dependent variable

Our primary dependent variable, *violation*, is a dummy variable that indicates an incidence of a regulatory violation. For each firm-year observation, violation is coded as one if there exist any types of violations for the firm in the year, and is coded as zero otherwise. It is possible for a firm to commit multiple violations in a year, but it is quite rare. There are only 62 firm-year observations in which there is more than one violation. Therefore, it is appropriate to measure violation incidences with a binary variable rather than with a count measure. Violations do differ in terms of severity. Usually, severe violations incur fines of some amount, depending on the severity of the violation. Less severe violations, on the other hand, usually do not incur fines but receive a written warning or public condemnation. To test the robustness of the results, we also used *severe violation* as an alternative dependent variable. Specifically, severe violation is coded as one if a violation was found and the firm was fined, and zero if there was no violation or the violation did not incur penalty fines.

3.2.2. Independent variables

TMT faultline is our primary independent variable. Although several methods have been developed to calculate team faultlines (Gibson and Vermeulen, 2003; Thatcher et al., 2003), we decided to measure TMT faultline strength by employing the average silhouette width (ASW) measure (Meyer and Glenz, 2013) because the ASW algorithm appears to be more robust and versatile than other methods (Meyer et al., 2014). This algorithm has also been extensively utilized by other faultline studies (e.g., Li and Jones, 2019; Mo et al., 2019). The ASW approach involves a two-step clustering procedure. First, the cluster-analytic methods are used to identify a set of starting

subgroup configurations within a given team. Second, the algorithm merges subgroups with similar team members into new, larger subgroups until the solution reaches the maximum ASW (Meyer and Glenz, 2013). Essentially, the ASW reflects the extent to which a TMT is split into homogeneous subgroups, making it ideal for quantifying faultline strength. The calculations are performed by the asw.cluster package (Meyer and Glenz, 2013) in R software.

Following van Knippenberg et al. (2011), faultlines in our study are measured based on several attributes: gender, tenure, education, and functional background. First, we consider gender as a bio-demographic attribute that forms a strong basis for subgroupings. Gender is a dichotomized variable (male or female). Second, TMT tenure refers to the duration each team member has served in that role in the current company. Tenure is measured as number of years. Third, we classify TMT education in terms of the highest level/degree: (1) high school or below; (2) college; (3) master's level; (4) doctoral level. Finally, we classify TMT functional background into six tracks: (1) accounting, finance, legal, investment; (2) engineering, technical, production, quality control; (3) HR, administration, (4) information, operation; (5) marketing, sales; (6) no specific management direction.

Subgroup balance. A faultline can split a TMT into subgroups with an equal number of members (balanced subgroups) or an unequal number of members (imbalanced subgroups). Subgroup configuration is a continuous variable that reflects such balancing of subgroup sizes. Specifically, it is calculated as the standard deviation of subgroup sizes, multiplied by −1 so that less deviation in subgroup sizes results in greater values. A TMT of 10 that has two 5-member subgroups has a balance score of 0 (i.e., subgroups are balanced), whereas a team that has one 2-member subgroup and one 8-member subgroup has a balance score of −3.

Tenure overlap. Tenure overlap measures top managers' average overlap in their tenure in the firm. We adopt the measure from prior studies (Carroll and Harrison, 1998):

$$Tenure\ Overlap = \frac{1}{N}\sum_{i \neq j} \min\ (u_i u_j),$$

where N is the team size and u_i is the tenure of the i^{th} member (in number of years), and u_j is the tenure of the j^{th} member. For example, for a TMT with four members that have tenures of 10, 8, 5, and 2 years, the tenure overlap is (8+5+2+5+2+2)/4 = 6.

3.2.3. Control variables

We included a comprehensive list of variables that can potentially predict the violation incidence. Firm size should be an important determinant of stock market violations. Larger firms are more visible, so they are less likely to engage in violations (Carcello and Nagy, 2004). We used the annual market value of the firm as a measure of firm size. Firms that have more debts shown on their balance sheet may have a higher incentive to engage in unethical financial conduct (Stanley and Sharma, 2011). Thus, we included the natural logarithm of a firm's total debt amounts as a control variable. Similarly, firm performance can also be an important determining factor for violations because low-performing firms have more incentives to commit violations (Finnerty et al., 2016), thus we included Tobin's Q. Ownership concentration is an important external governance mechanism. Firms with more concentrated ownership structures (fewer owners and higher percentages of shares) may be under strong monitoring by the owners and are less likely to engage in misconduct (Wang et al., 2023). We measured ownership concentration with the total percentage of shares of the top three owners. In addition to the above-mentioned firm characteristics, the board of directors is a crucial mechanism influencing the likelihood of a firm's stock market violations. Directors have a fiduciary duty to ensure the ethical and legal conduct of the TMT, and thus firms with boards that better monitor the top management should have a lower likelihood of committing any misconduct. We included four variables that capture the monitoring quality of boards: board size, percentage of independent directors, total compensation of directors, and CEO–Chair duality. Board size may impact monitoring intensity, which influences the likelihood of misconduct (Coles et al., 2008). Independent

directors are associated with a lower likelihood of corporate financial fraud in Chinese firms (Xing et al., 2022). Boards that receive higher cash compensation are likely to have greater monitoring intensity that reduces the likelihood of fraud (Radwan et al., 2022). Yet, CEO–Chair duality can impede effective monitoring and may increase the likelihood of violations (Neville et al., 2019). In addition, we included TMT average compensation because executive compensation influences corporate misconduct (Harris and Bromiley, 2007). CEO characteristics are associated with corporate financial fraud (Schnatterly et al., 2018; Troy et al., 2011); therefore, we controlled for CEO gender, CEO age, and CEO tenure. The number of top executives hired after the CEO is also included as a control.

4. Results

4.1. Analysis

The final data is cross-sectional time series data, and the primary dependent variable is a dichotomized indicator variable that has values of zero and one. Thus, we used a panel-data GEE (generalized estimating equations) model. The GEE model derives maximum likelihood estimates, accommodates non-independent observation, and is robust against autocorrelation and heteroscedasticity. The GEE model is widely adopted in the management literature and upper-echelons research (e.g., Ndofor et al., 2015). Because our dependent variable is a dichotomized indicator, we specified a binomial distribution with a logit link function. We specified an exchangeable correlation structure and used robust standard error estimators (White, 1980). Finally, to account for industry fixed-effects and year fixed-effects, we included industry dummies and year dummies in all models.

In addition to the primary analysis using the GEE model, we also tested the hypotheses using a rare events logistics model. The conventional logistics model is known to suffer from small-sample bias. In our final data, there are 324 violations out of the total 4,904 observations; thus, the violations may be considered rare events. To reduce the biased estimates caused by rare events in logistics models, a penalized maximum

likelihood estimation should be used, which is a general approach to reducing small-sample bias in maximum likelihood estimation. Thus, we used the Firth model, which is recommended by econometricians to overcome the biased estimates in a rare events logistics model (Firth, 1993).

4.2. Descriptive statistics and correlations

The descriptive statistics are presented in Table I. Note that both *Violation* and *Severe violation* are dichotomized variables that have the value of 0 or 1; thus, their means indicate the percentage of value 1 in the sample. The values of *Market Value*, and *Total Debt* are the natural log of the original values.

[Insert Table I about here]

The correlations of all variables are shown in Table II. To alleviate concerns of multicollinearity, we ran an OLS model and obtained the variance inflation factors (VIFs). The VIFs of all the control variables and predictor variables range from 1.03 to 4.94. Thus, there are minimal concerns because they are well below the critical threshold of 10.

[Insert Table II about here]

4.3. Hypothesis testing results

The primary analysis used GEE models and used all stock market violations as the main dependent variable. The results are presented in Table III. Column 1 includes only control variables; column 2 tests the main effect of TMT faultlines; column 3 tests the main effects of TMT faultlines and subgroup balance, column 4 includes the interaction term between TMT faultlines and the balance of subgroups; column 5 tests the main effects of TMT faultlines and tenure overlap, column 6 includes the interaction effect between TMT faultlines and tenure overlap; and column 7 includes all variables.

[Insert Table III about here]

Hypothesis 1 predicts that TMT faultlines are negatively related to the likelihood of violation. In column 1, the coefficient of *TMT Faultline* is negative and significant ($b = -1.192$, $p < 0.001$); therefore, hypothesis 1 was supported. We also conducted marginal effects analysis to estimate the effect size. The average probability of violation

is 0.102 when there is no TMT faultline, and the probability decreases to 0.038 when there is a maximum TMT faultline.

Hypothesis 2 predicts that balance of subgroups will strengthen the negative effect of TMT faultlines. In column 4 of Table III, the coefficient of the product term *TMT Faultline * Subgroup Balance* is negative and significant (b = −0.928, $p < 0.05$); thus hypothesis 2 was supported. The interaction effect is plotted in the following Figure 1. Because the dependent variable is binary (commits violation or not), the model is inherently a non-linear one. To better illustrate the non-linear effects, we use a three-dimensional surface plot. We also include a traditional two-dimensional plot at three levels of subgroup balance. As is shown in the surface plot and the two-dimensional plot, TMT faultlines and the probability of violation has a general negative relationship when subgroup balance is strong. For example, when subgroups are balanced (subgroup balance = 0), the probability of violations decreases very quickly as TMT faultlines increase from low to moderate levels, and the downward trend slows down once TMT faultline reaches high levels. Specifically, the probability of violations decreases from 0.143 to 0.026 as TMT faultlines increases from 0 to 1. However, when subgroups are not balanced (subgroup balance = -2.5), the effect of TMT faultlines flips and it has a small positive relationship with the probability of violations. Specifically, the probability of violations increases from 0.050 to 0.070 as TMT faultlines increase from 0 to 1.

[Insert Figure 1a and 1b about here]

Hypothesis 3 predicts that tenure overlap will weaken the negative effect of TMT faultline. In column 6 of Table III, the coefficient of the product term *TMT Faultline * Tenure Overlap* is positive but not significant (b = 0.154, *n.s.*); thus, hypothesis 3 was not supported.

4.4. Supplemental analysis

We conducted several sets of supplemental analyses to test the robustness of the results from the primary analysis. First, instead of using all stock market violations as the dependent variable, we used only severe violations, which is a more restricted and

conservative indicator of firms' misconduct. Table IV presents the results of GEE models predicting the likelihood of severe violations.

[Insert Table IV about here]

Column 2 of Table IV shows that *TMT Faultline* is negatively related to probability of *Severe Violations* (b = -1.179, $p < 0.1$). Column 4 of Table IV shows that *Subgroup Balance* strengthens the effect of TMT faultline (b = -1.488, $p < 0.01$). The main effects of TMT faultline and moderating effect of subgroup balance are fully consistent with the primary results. In addition, column 6 in Table IV shows that the *Tenure Overlap* weakens the effect of *TMT Faultline* (b = 0.370, $p < 0.001$), which is consistent with hypothesis 3. Thus, the results suggest that tenure overlaps between CEOs and TMT weakens the effect of TMT faultlines on severe violations only, but not all violations.

Second, we used a rare events logistics model to test our hypotheses. Stock market violations can be considered rare events, and thus conventional models such as GEE may produce biased estimates. We tested our results using a rare events logistics model by including violations and severe violations as dependent variables. Both sets of results are fully consistent with the GEE models.

Third, to address the potential bias due to omitted variables, which is a primary source of endogeneity, we conducted an analysis of the impact threshold of a confounding variable (ITCV) (Busenbark et al., 2022). The results indicate that an omitted variable would have to correlate with the dependent variable violations at 0.139 to invalidate the causal inference of TMT faultline. In our data, only *ROA* has a stronger correlation with violations ($r = -0.15$), and all other covariates have a much weaker correlation than this threshold. Thus, it is unlikely that there exists such an omitted variable that would correlate such highly with *Violations* that can bias the causal inference. Overall, the supplemental analysis shows that our primary results are quite robust.

Finally, it is possible that stock market violations may influence TMT faultlines. To address the concerns for reverse causality, we conduct the Granger causality test, which is used to determine whether reciprocal effects exist in a time series or panel data (Lopez and Weber, 2017). We regress *TMT faultline* on *Violations* (with one-year and

two-year lags). The results show that *Violations* do not Granger-cause *TMT faultline*, alleviating the concerns for reverse causality.

5. Discussion

Corporate governance research is dominated by the principal–agency framework, under which inherent conflicts between shareholders and managers have been considered the key to the agency problem (Fama and Jensen, 1983; Jensen and Meckling, 1976). Despite research efforts, corporate governance literature lacks discussions of the demographic faultlines within the TMT and how managerial faultlines can be leveraged to improve corporate governance. This study addresses these gaps and proposes an agency–agency perspective on corporate governance. We argue that demographic faultlines divide the TMT into factions and increase conflict among factional subgroups, which, in turn, generates mutual monitoring. Our research demonstrates the direct effects of managerial faultlines on financial fraud in Chinese-listed companies. In particular, our findings show that managerial faultlines can attenuate corporate financial fraud and that this negative relationship is contingent on TMT subgroup balance. Our research sheds new light on the role of agent diversity in corporate governance outcomes.

5.1. Theoretical implications

This study makes important theoretical contributions. First, we contribute to agency theory by addressing the potential conflicts within the TMT and extending the focus of principal–agency dichotomy towards an agency–agency perspective on corporate governance. Extant corporate governance literature generally views the TMT as an aligned group and emphasizes the potential for a unified management team to appropriate corporate resources for private benefits at shareholders' expense (Daily et al., 2003). This paper invokes faultlines theory and suggests that faultlines amplify conflicts, cause competition, and disturb collaboration within the TMT, which, in turn, generates factional subgroups. Our argument extends principal-agency based corporate governance by including agent diversity into consideration. Examining multiple

attributes of the diversified agents opens up an exciting new avenue of research leading to an improved corporate governance practice. We invoke faultline theory and contribute to TMT and board diversity literature because faultlines consider the alignment of multiple attributes of members (Bezrukova et al., 2009). Diversity is typically operationalized by examining one demographic characteristic at a time. Faultline research however indicates that even highly diverse teams may exhibit weak faultlines, especially when any subgroups formed are similar in only one dimension (Lau & Murnighan, 1998). TMT and board diversity literature fails to account for how a combination of demographic characteristics influences TMT members simultaneously (Thatcher et al., 2003). Faultlines, which divide teams into subgroups based on multiple demographic attributes, offer a more comprehensive framework for understanding the effects of team composition than the traditional diversity perspective (Zhang et al., 2021).

Second, we contribute to corporate governance research by identifying and examining the underlying mechanism that transforms managerial faultlines into governance functions. Prevailing corporate governance research probes the efficacy of the various mechanisms available to discipline the agents from self-serving behavior (e.g., Hambrick et al., 2015; Jia et al., 2009; Martin et al., 2019). Very few studies have attempted to examine potential conflicts within the TMT and the resulting mutual monitoring among top executives. Li (2014) asserts that the balance of authority and decision rights leads to mutual monitoring between CEO and the highest-paid non-CEO executive. Rather than relying on the aggregation of individual executives' attributes (i.e., payment), we lift the level of analysis to the group level and argue that faultlines create the necessary conditions and motivation for mutual monitoring. We implicitly test the relationship between TMT faultlines and corporate financial fraud and enrich our understanding of the mechanisms connecting faultlines and corporate governance.

Third, through examining faultlines' role in corporate governance, this study alters the stereotype of social categorization effects caused by TMT faultlines. According to social identity theory (Tajfel, 1978) and social categorization theory (Turner, 1985),

demographic faultlines are suggested to drive the formation of social-identity based subgroups and therefore trigger social categorization processes (van Knippenberg et al., 2004). These processes are always connected to dysfunctional social interactions and outcomes, such as emotional contradiction, mistrust, and dislike (Choi and Sy, 2010; Lau and Murnighan, 1998) and ineffective communication and information utilization (Cronin et al., 2011; Crucke and Knockaert, 2016; Polzer et al., 1998). However, we argue that subgroups within a TMT may also form a counterbalancing effect to reduce organizational risk.

Finally, this study provides insights into the boundary conditions of how managerial faultlines affect corporate financial fraud. Our results show that faultlines can be leveraged as a counterbalance to managerial autonomy and self-serving behavior. Extant literature has studied internal mechanisms to reduce corporate fraud by addressing board characteristics and ownership structure. This paper integrates faultlines theory with corporate fraud literature and argue that faultlines and the resulting factions within TMTs provide an alternative mechanism to deter and reduce fraud. TMT faultlines can paradoxically enhance internal governance by fostering mutual checks, which ultimately reduce corporate fraud.

We also examine under what conditions faultlines can function more effectively. Our paper considers the configuration of subgroups and TMT members' tenure overlap. Our findings clarify the conditions under which the mutual monitoring function of faultlines can be exhibited. Although managerial faultlines may directly reduce corporate financial fraud and improve corporate governance, their effectiveness is also determined by the balance of the subgroups and by tenure overlap among TMT members. This contingency effect is important because it elaborates the distinct facets of managerial faultlines as a corporate governance mechanism and provides the foundation for leveraging faultlines to discipline the TMT.

5.2. Managerial implications

Our study yields important practical implications. First, our findings show that TMT faultlines can improve the effectiveness of corporate governance. Thus,

shareholders should place greater emphasis on understanding the demographic differences within the TMT and ensure that TMT members have heterogeneous demographic features to promote mutual monitoring among them. Second, our results indicate that the effectiveness of mutual monitoring among TMT members is weakened by imbalanced subgroup configurations. Thus, public firms and their board of directors should place a greater emphasis on managing TMT configuration and maintaining a balanced TMT team. A balanced TMT configuration in terms of members' demographic attributes can strengthen the effects of faultline on corporate fraud reduction. Finally, this study provides valuable practical implications for firms and regulators in China. Our findings suggest that managerial factional faultlines can serve as an effective governance mechanism to mitigate managerial opportunism and deter corporate financial fraud. Therefore, boards of directors at listed firms should carefully consider TMT composition when appointing top managers. Investors and their agencies should carefully balance the benefits and costs of a diversified TMT in their endeavor to promote gainful investment. Regularly rotating managers within the organization could help prevent the formation of strong managerial coalitions, thereby reducing the risk of opportunistic behavior.

5.3. Limitations and future directions

This study has several limitations, which open new avenues for future research. First, the sample of this study focuses on a single economy: China. Future studies can test whether our theoretical model applies to other agency problems such as related-party transactions and corporate takeovers. Our theoretical model can also be tested in other emerging economies such as Russia and India, which also suffer from various agency problems. Second, while we utilized multiple measures of managerial faultlines, it is possible that our findings captured only a partial picture of faultlines and their implications in corporate governance. This paper suggests that mutual monitoring processes are not limited to formal, role-based information exchange, and may involve clandestine information collection and investigative efforts. Thus, future research could consider conducting qualitative analysis to gain more insights into the Blackbox

between faultlines and corporate governance activities using surveys and case interviews. The roles of different types of faultlines (i.e., demographic-related vs. task-related) in shaping the mutual monitoring and information exchanges are also required further exploration. Another interesting way is to explore the number of executives appointed after (by) the CEO to see whether these executives support the CEO. Finally, we examined the effect of faultlines on financial fraud in listed firms. However, corporate financial fraud is a multidimensional item. Thus, it would be useful to specifically examine the effects of managerial faultlines on different types of fraud.

6. Conclusion

In this paper, we argue that TMT faultlines drive the formation of social-identity–based subgroups and therefore trigger competition and conflicts within the TMT. We provide compelling empirical evidence to illustrate that managerial faultlines can help firms mitigate corporate financial fraud, and we explore the contingency effects of faultline configuration on the relationship between faultlines and corporate financial fraud. This study theoretically addresses the potential mutual monitoring between different factions within the TMT and empirically examines the underlying mechanisms of managerial faultlines and corporate governance outcomes. Our theoretical framework and empirical findings deepen the current understanding of why and how TMT faultlines contribute to corporate governance.

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Table 1
Descriptive Statistics

	count	mean	sd	p5	p25	p50	p75	p95
Violation	4904	0.07	0.25	0.00	0.00	0.00	0.00	1.00
Severe Violation	4904	0.02	0.15	0.00	0.00	0.00	0.00	0.00
TMT Faultline	4904	0.50	0.19	0.17	0.36	0.50	0.62	0.82
Subgroup Balance	4904	-0.89	0.84	-2.12	-1.41	-0.71	-0.50	0.00
Tenure Overlap	4904	6.98	4.89	1.75	3.75	5.76	9.00	16.00
Market Value	4904	8.84	1.16	7.02	8.03	8.76	9.61	10.99
Total Debt	4904	6.85	2.62	0.89	5.58	6.99	8.50	11.15
Tobin's Q	4904	2.21	2.66	0.34	0.81	1.51	2.66	6.18
Ownership	4904	49.29	17.46	22.35	36.69	48.61	61.18	79.03
Board Size	4904	9.25	2.03	7.00	8.00	9.00	10.00	13.00
Independent Dir	4904	0.36	0.07	0.33	0.33	0.33	0.40	0.45
Avg Dir Comp	4904	1.59	0.36	1.05	1.37	1.57	1.75	2.17
CEO-Chair Duality	4904	0.17	0.38	0.00	0.00	0.00	0.00	1.00
Avg TMT Comp	4904	4.78	0.30	4.26	4.61	4.79	4.96	5.27
CEO Age	4904	47.65	6.11	38.00	44.00	48.00	51.00	58.00
CEO Tenure	4904	3.29	2.22	1.00	2.00	3.00	3.00	8.00
Female CEO	4904	0.02	0.14	0.00	0.00	0.00	0.00	0.00
Exec after CEO	4904	0.50	1.38	0.00	0.00	0.00	0.00	3.00

Table 2 Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Violation	1.00																
2 Severe Violation	0.56	1.00															
3 TMT Faultline	-0.09	-0.05	1.00														
4 Subgroup Balance	0.02	0.00	-0.17	1.00													
5 Tenure Overlap	-0.06	-0.03	0.29	-0.24	1.00												
6 Market Value	-0.03	-0.02	0.11	-0.16	0.21	1.00											
7 Total Debt	-0.01	-0.01	0.07	-0.13	0.18	0.44	1.00										
8 Tobin's Q	0.06	0.04	-0.04	0.05	-0.09	0.11	-0.39	1.00									
9 Ownership	-0.09	-0.06	0.03	0.02	-0.06	0.23	0.10	-0.09	1.00								
10 Board Size	-0.03	-0.02	0.04	-0.05	0.10	0.08	0.17	-0.15	0.08	1.00							
11 Independent Dir	0.01	0.01	0.03	-0.07	0.07	0.22	0.14	0.01	0.01	-0.34	1.00						
12 Avg Dir Comp	0.04	0.03	-0.02	-0.02	-0.00	0.12	-0.06	0.13	-0.07	-0.85	0.43	1.00					
13 CEO-Chair Duality	0.04	-0.00	0.11	-0.02	0.07	0.02	-0.07	0.08	-0.06	-0.15	0.13	0.20	1.00				
14 Avg TMT Comp	0.01	0.01	0.08	-0.20	0.24	0.58	0.27	-0.03	0.02	0.01	0.23	0.29	0.13	1.00			
15 CEO Age	0.01	0.01	0.02	-0.07	0.06	0.16	0.11	-0.03	0.12	0.07	0.04	-0.03	0.03	0.14	1.00		
16 CEO Tenure	0.01	-0.01	-0.01	-0.03	0.13	0.02	0.02	-0.02	-0.07	-0.01	0.02	0.03	0.07	0.08	0.20	1.00	
17 Female CEO	0.04	0.03	-0.08	0.01	-0.07	-0.04	-0.04	0.01	-0.02	-0.03	0.00	0.01	-0.01	-0.04	0.02	0.02	1.00
18 Exec after CEO	0.01	0.01	-0.08	-0.04	0.00	0.10	0.06	0.00	-0.05	0.01	0.04	0.03	0.04	0.11	0.19	0.53	0.11

N=4904, correlations >= 0.03 or <= -0.03 are significant at $p<0.05$

Table 3
Results of GEE Models Predicting Probability of All Stock Market Violations

	DV = Probability of Stock Market Violation						
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TMT Faultline		-1.192***	-1.163**	-1.938***	-1.048**	-1.902**	-2.396***
		(0.356)	(0.355)	(0.503)	(0.356)	(0.622)	(0.650)
Subgroup Balance			0.080	0.499*			0.447*
			(0.075)	(0.196)			(0.193)
TMT Faultline * Subgroup Balance				-0.928*			-0.843*
				(0.388)			(0.383)
Tenure Overlap					-0.031+	-0.110*	-0.092+
					(0.016)	(0.052)	(0.050)
TMT Faultline * Tenure Overlap						0.154	0.120
						(0.094)	(0.091)
Market Value	-0.415***	-0.390***	-0.388***	-0.393***	-0.374***	-0.376***	-0.380***
	(0.094)	(0.092)	(0.092)	(0.092)	(0.092)	(0.092)	(0.091)
Total Debt	0.061+	0.064*	0.066*	0.069*	0.071*	0.072*	0.076*
	(0.033)	(0.033)	(0.033)	(0.033)	(0.032)	(0.032)	(0.033)
Tobin's Q	0.068***	0.067***	0.066***	0.066***	0.067***	0.068***	0.067***
	(0.019)	(0.020)	(0.020)	(0.020)	(0.019)	(0.019)	(0.020)
Ownership	-0.012**	-0.013**	-0.013**	-0.013**	-0.014**	-0.014**	-0.014**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Board Size	0.162+	0.159+	0.165+	0.154+	0.172*	0.165*	0.161+
	(0.083)	(0.084)	(0.085)	(0.085)	(0.084)	(0.084)	(0.085)
Independent Dir	0.083	0.252	0.303	0.212	0.263	0.269	0.222
	(1.277)	(1.285)	(1.285)	(1.285)	(1.286)	(1.282)	(1.285)
Avg Dir Comp	0.639	0.600	0.617	0.580	0.651	0.621	0.606
	(0.466)	(0.473)	(0.475)	(0.472)	(0.476)	(0.472)	(0.473)
CEO-Chair Duality	0.243	0.289+	0.285+	0.274+	0.298+	0.291+	0.280+
	(0.161)	(0.161)	(0.161)	(0.161)	(0.161)	(0.161)	(0.161)
Avg TMT Comp	-0.454	-0.395	-0.375	-0.372	-0.350	-0.321	-0.307
	(0.386)	(0.386)	(0.384)	(0.384)	(0.383)	(0.383)	(0.381)
CEO Age	0.004	0.004	0.004	0.004	0.004	0.002	0.003
	(0.011)	(0.011)	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)
CEO Tenure	-0.010	-0.005	-0.005	-0.004	0.008	0.016	0.015
	(0.031)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)

Female CEO	0.516	0.453	0.453	0.464	0.441	0.427	0.438
	(0.332)	(0.331)	(0.333)	(0.335)	(0.333)	(0.337)	(0.340)
Exec after CEO	-0.063	-0.075	-0.074	-0.073	-0.092^{+}	-0.101^{+}	-0.098^{+}
	(0.052)	(0.054)	(0.054)	(0.054)	(0.055)	(0.056)	(0.055)
Constant	1.485	1.672	1.554	2.115	1.248	1.718	2.048
	(1.615)	(1.621)	(1.636)	(1.646)	(1.621)	(1.636)	(1.658)
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4904	4904	4904	4904	4904	4904	4904
N of Firms	1097	1097	1097	1097	1097	1097	1097
Wald Chi-square	226***	229***	231***	234***	236***	260***	259***

Robust standard errors in parentheses. $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Table 4

Results of GEE Models Predicting Probability of Severe Stock Market Violations

	DV = Probability of Severe Stock Markt Violation						
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
TMT Faultline		-1.179^{+}	-1.188^{+}	-2.496***	-1.112^{+}	-3.170***	-3.564***
		(0.624)	(0.619)	(0.756)	(0.624)	(0.854)	(0.807)
Subgroup Balance			-0.021	0.674*			0.442
			(0.111)	(0.263)			(0.286)
TMT Faultline * Subgroup Balance				-1.488**			-0.987^{+}
				(0.459)			(0.532)
Tenure Overlap					-0.012	-0.213**	-0.172*
					(0.028)	(0.071)	(0.077)
TMT Faultline * Tenure Overlap						0.370***	0.287*
						(0.109)	(0.126)
Market Value	-0.491**	-0.464**	-0.465**	-0.482**	-0.456**	-0.491**	-0.496**
	(0.160)	(0.156)	(0.155)	(0.153)	(0.157)	(0.154)	(0.154)
Total Debt	0.080	0.084	0.084	0.089^{+}	0.086^{+}	0.091^{+}	0.095^{+}
	(0.053)	(0.053)	(0.053)	(0.053)	(0.052)	(0.051)	(0.052)
Tobin's Q	0.061**	0.059**	0.059**	0.059**	0.058**	0.057*	0.058*
	(0.021)	(0.022)	(0.021)	(0.022)	(0.022)	(0.023)	(0.023)
Ownership	-0.016*	-0.017*	-0.017*	-0.017**	-0.017*	-0.017*	-0.018**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Board Size	0.152	0.144	0.143	0.119	0.151	0.123	0.110
	(0.118)	(0.118)	(0.120)	(0.120)	(0.120)	(0.116)	(0.120)
Independent Dir	-1.235	-1.155	-1.170	-1.337	-1.164	-1.084	-1.257
	(2.163)	(2.180)	(2.175)	(2.189)	(2.178)	(2.172)	(2.179)
Avg Dir Comp	0.887	0.838	0.834	0.756	0.865	0.755	0.718
	(0.611)	(0.613)	(0.617)	(0.620)	(0.619)	(0.612)	(0.626)

CEO-Chair Duality	-0.186	-0.140	-0.139	-0.156	-0.136	-0.158	-0.154
	(0.289)	(0.289)	(0.289)	(0.287)	(0.289)	(0.283)	(0.282)
Avg TMT Comp	-0.089	-0.055	-0.064	-0.042	-0.044	0.070	0.057
	(0.502)	(0.500)	(0.502)	(0.508)	(0.491)	(0.499)	(0.505)
CEO Age	0.012	0.012	0.012	0.012	0.012	0.007	0.007
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
CEO Tenure	-0.082	-0.077	-0.077	-0.075	-0.072	-0.049	-0.050
	(0.050)	(0.051)	(0.051)	(0.051)	(0.052)	(0.052)	(0.052)
Female CEO	0.651	0.583	0.581	0.602	0.584	0.565	0.576
	(0.544)	(0.539)	(0.539)	(0.532)	(0.538)	(0.545)	(0.539)
Exec after CEO	-0.005	-0.013	-0.014	-0.014	-0.019	-0.045	-0.043
	(0.076)	(0.078)	(0.078)	(0.076)	(0.079)	(0.078)	(0.078)
Constant	-1.427	-1.153	-1.086	-0.019	-1.359	0.079	0.598
	(3.012)	(3.048)	(3.090)	(3.066)	(2.988)	(2.858)	(2.951)
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4640	4640	4640	4640	4640	4640	4640
N of Firms	1052	1052	1052	1052	1052	1052	1052
Wald Chi-square	152^{***}	155^{***}	154^{***}	168^{***}	158^{***}	222^{***}	223^{***}

Robust standard errors in parentheses. $^{+}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Figure 1a
Surface Plot of the Interaction Effects between TMT Faultline and Subgroup Balance

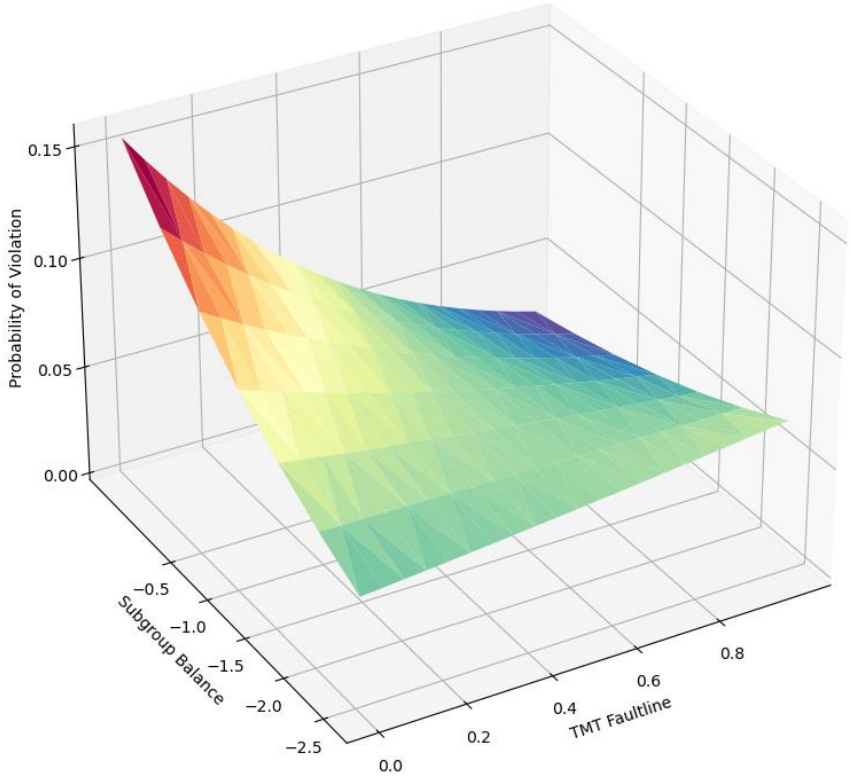

Figure 1b
Two-dimensional plot of the Interaction Effects between TMT Faultline and Subgroup Balance