**Strategic deviation and cost of debt financing**

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**Disclosure Statement:**

No potential conflict of interest was reported by the authors.

**Acknowledgments:**

This research was funded by the “Funds for High-Level Talents of Xijing University (2019), Grant/Award Number: XJ19B02.”

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**Abstract**

This paper examines the impact of strategic deviation on the cost of debt financing. Strategic deviation refers to the extent to which a firm’s strategy deviates from the industry’s central tendency. Using one of the largest firm-level datasets consisting of 3,740 Chinese listed firms sampled from 2007 to 2018 (i.e., over 20,000 firm-year observations), we find that strategic deviation has a positive effect on the firm’s cost of debt financing in China. The creditors/investors associate strategic deviation with higher cost of debt financing. We further explore three possible underlying risk mechanisms through which strategic deviation affects the cost of debt: (i) operational risk, (ii) informational risk, and (iii) agency debt risk. We demonstrate further that foreign experience and age of upper echelons negatively moderate the positive relationship between strategic deviation and cost of debt financing. The results are robust to the use of alternate measures and potential endogeneity issues.

*Keywords*: Strategic deviation; the cost of debt; operational risk; informational risk; agency debt risk; China.

1. **Introduction**

We seek to contribute to the international corporate finance literature by investigating the impact of firm’s strategic deviation on the cost of debt financing using a unique and comprehensive sample of Chinese listed firms over the period from 2007 to 2018. Further, we investigate the effect of strategic deviation on the cost of debt financing via three perspectives on risk: (i) operational risk; (ii) informational risk; and (iii) agency debt risk. Since, upper echelons play an integral role in the formulation and implementation of strategic decisions, we also examine the possible influence of the characteristics of the key upper echelons (i.e., Chairperson, CEOs, top management team (TMT) and board members) on the relationship between strategic deviation and the cost of debt financing.

Strategic deviation refers to the extent to which a firm’s strategies depart from other firms in the industry (Carpenter, 2000; Deephouse, 1996, 1999; Finkelstein and Hambrick, 1990; Geletkanycz and Hambrick, 1997). Despite the importance of strategic deviation, prior literature has focused on investigating its different antecedents, but in contrast, paid little attention to its consequences (Müller and Kunisch, 2018). In particular, studies that have primarily been conducted in developed markets, such as the EU, UK and US have examined different antecedents of strategic deviation (e.g., CEO compensation) (Carpenter, 2000), external ties of top executives (Geletkanycz and Hambrick, 1997), board capital and CEO power (Haynes and Hillman, 2010), CEO dominance (Tang et al., 2011), top management team characteristics (Cho and Hambrick, 2006), media coverage (Bednar et al., 2013) and outsider CEOs (Karaevli and Zajac, 2013). On the other hand, studies examining the outcomes of strategic deviation are rare. Nevertheless, a number of studies primarily conducted in a number of developed markets have mainly examined the nexus between strategic deviation and firm performance, but such studies have reported mixed findings. For instance, strategic deviation has a positive (Hambrick and Schecter, 1983), negative (Singh et al., 1986) or inverted U-shaped (Zhang and Rajagopalan, 2010) relationship with firm performance. A recent study (Ye et al., 2018) found that firm’s strategic deviation is crucial in the stock price-formation process and negatively affects the stock return synchronicity.

This study bridges the strategic international finance literature and explores the impact of strategic deviation on the cost of debt. It argues that firms’ deviant strategies stimulate the creditors/investors to behave differently. Debt financing is a critical component of firm’s capital structure specifically in emerging economies due to different market conditions. Furthermore, in comparison to developed markets, emerging markets have experienced a more pronounced surge in leverage over the past decades (Keasey et al., 2015; Mitton, 2008). Creditors/investors always try to minimize all sorts of risks to secure their investment and accordingly determine the cost of debt financing for borrowers. In cases where the borrowing firms are following industry norms, the perceived risk is low; however, when the borrowing firms start deviating from the industry norms; the creditors/investors’ risk increases due to uncertain future performance.

Strategic deviation leads firm to perform differently from its industry peers (Tang et al., 2011) and affects firm’s performance positively or negatively (Hambrick and Schecter, 1983; Singh et al., 1986). Consequently, the creditors/investors will find it riskier to invest in strategically deviated firms and will demand a higher rate of return (to secure their investments against the uncertainties) from such strategically deviated firms. In other words, firm’s involvement in strategic deviation increases the risk for creditors/investors and as a result, the cost of debt financing increases. Following these arguments, we first contribute by proposing that when rational creditors anticipate firms to be at higher level of risks (due to deviation in strategies), they will seek higher risk premiums and will ultimately increase the cost of debt financing (i.e., strategic deviation) will increase the cost of debt financing.

Our second contribution is to examine the impact of strategic deviation on cost of debt financing via three distinct risk mechanisms. First, we hypothesize that strategic deviation affects the cost of debt financing from an operational risk perspective. Tang et al. (2011) in their seminal work argued that firms who engaged in strategic deviation are more eager to pursue discrete corporate operations and explore new markets, in comparison to their counterparts. These uncertain situations probably can lead to either big wins or big losses by increasing a firm’s exposure to risk. Preceding studies (Botosan and Plumlee, 2002) provide evidence that differences in corporate strategies result in increased cost of equity financing. In such scenarios, these firms find it essential to allocate their resources (both internal and external) prudently to tackle the contingencies and mounting uncertainties in operational processes. In the external context, they might go beyond the institutional guidelines and policies, which can result in regulatory or government interventions, besides enhancing operational risk.

Contrary, from an internal perspective, firm’s management can face owners’ (shareholders) criticism and resistance due to: (a) emergence of agency conflicts (Jensen and Meckling, 1976); and (b) for engaging in risk-prone operational activities and resource allocations. Accordingly, firm’s inclination to implement deviant strategies in limited resource environment can: (i) further increase the operational risks associated with the business; and (ii) result in fluctuations in firm’s performance (both from low and high sides) (Botosan and Plumlee, 2002; Tang et al., 2011). Consequently, investors with the motive of securing their investment and avoid high risks will demand a higher rate of return from the firm. Following these arguments, we propose that when rational creditors anticipate firms to be at higher operational risks (due to strategic deviation), they will demand higher risk premiums and will ultimately increase the cost of debt financing.

Second, we propose that strategic deviation affects the cost of debt financing via informational risk. Informational asymmetry is a widely debated topic in corporate finance and strategic management (Aboody and Lev, 2000; Chae, 2005; Fosu et al., 2016; Hughes et al., 2007; Krishnaswami et al., 1999; Sufi, 2007). Prior research has investigated the relationship between information asymmetry and financing arrangements (Sufi, 2007), insider gains and trading (Aboody and Lev, 2000; Huddart and Ke, 2007; Joseph and Wintoki, 2013), trading volume (Atiase and Bamber, 1994; Chae, 2005), firm value (Fosu et al., 2016), capital structure (Bharath et al., 2008; Hughes et al., 2007; Krishnaswami et al., 1999), earnings management (Chu and Song, 2010; Richardson, 2000), and equity issues (Lang and Lundholm, 2000), among others. In particular, the firm’s financing cost increases due to increased information asymmetry, which makes it difficult for the firms to trace the extent of earnings management in the organization (Chu and Song, 2010; Richardson, 2000).

We argue that strategic deviation makes it difficult for the external investors/creditors to evaluate and prepare a feasibility report for financing. In such situations, the latter is unable to identify the standard practices and corporate behavior of the given firm and consequently leading to enhanced asymmetric situation between the firm and the potential investors (Carpenter, 2000). Accordingly, in these contexts, the firm’s financing cost will increase as the investors (whether banks or financial institutions) have to spend more time and cost in the evaluation of the firm’s strategic management practices, business models and deviant behavior, amongst others. Following these arguments, we hypothesize that when rational creditors/investors see firms to be at a higher level of information asymmetry (due to strategic deviation), they will seek higher risk premiums for their additional efforts in the evaluation of firm’s informational risk and ultimately will increase the cost of debt financing.

Third, we propose that strategic deviation changes the cost of debt financing via debt agency risk. We argue that agency problems between firm’s management and investors (shareholders and bondholders) can arise due to: (a) limited control on firm’s informational risk; and (b) strategic deviation, which results in information asymmetry (as noted previously). The existing literature (Ang et al., 2000; Jensen and Meckling, 1976) claims that agency risk in firms with dispersed ownership occur mainly between the management and external investors, where senior management is more inclined to over-invest and grow due to lack of information symmetry between the principal and agent. Ashbaugh-Skaife et al. (2006) contend that such investments (driven by personal motives) will result in reduced credit ratings for firms and future cash flows for the firms’ owners, and finally leading to risky investments for creditors. Consequently, the investors/creditors will demand a higher rate of return for such uncertain investments.

Contrary, in the case of concentrated ownership, the agency risk mainly prevails among shareholders, non-controlling shareholders, and creditors. In such ownership structure, the controlling shareholders are motivated to transfer out the firm’s high-quality assets or profits via different tunneling methods (e.g., long-term interest-free possession of the firm’s funds, and unfair related transactions) (Johnson et al., 2000; Lin et al., 2011; Shleifer and Vishny, 1997). Consequently, the firm will face: (i) reduced cash flows (Lin et al., 2011); (ii) increased value damage (Lin et al., 2011; Luo et al., 2015); and (iii) increased investment risks for non-controlling shareholders and creditors due to conflict of interest. Additionally, the value of mortgage kept as collateral for firm’s liabilities decreases due to such tunnelling by controlling shareholders, which ultimately decreases the likelihood of debt collection in case of firm’s liquidation for creditors/investors (Friedman et al., 2003). Following these arguments, we hypothesize that when rational creditors/investors see more agency problems in the firm (due to strategic deviation), they will ask for higher risk premiums to cover higher investment risks and ultimately will increase the cost of debt financing.

Upper echelons view emphasize that upper echelons are an integral part for firms in the formulation and implementation of strategic policies (Hambrick, 2007; Hambrick and Mason, 1984). Prior relevant studies have examined upper echelons characteristics (e.g., external ties of top executives) (Geletkanycz and Hambrick, 1997), board capital and CEO power (Haynes and Hillman, 2010), CEO dominance (Tang et al., 2011), media coverage (Bednar et al., 2013), top management team characteristics (Cho and Hambrick, 2006), and outsider CEOs (Karaevli and Zajac, 2013) in nexus with strategic deviation. Drawing from the findings of these studies and upper echelons view, our third contribution is that we examine how distinct attributes (e.g., foreign exposure and age) of upper echelons can play a pivotal role in mitigating the perceived risk for external creditors/investors while financing strategically deviated firms.

Firstly, Giannetti et al. (2015) find evidence that directors and managers with overseas experience significantly enhance firms’ governance mechanism and hence mitigate managerial myopia. We argue that if firms with strategic deviation employ upper echelons with overseas experience, the improved firm corporate governance and reduced managerial myopia may ease creditors concern on strategic deviation firms. Therefore, hiring such upper echelons may mitigate the positive relationship between strategic deviation and cost of debt. Secondly, prior studies depict that individuals with old age are less likely to be involved in unethical behaviour and avoid pursuing risky investments in comparison to their counterparts (Huang et al., 2012; Serfling, 2014). We argue that the presence of such upper echelons will signal to the creditors/investors that despite firm’s deviant strategy, the shrewd upper echelons with their years of experience (due to old age) will ensure avoidance of risky investments. We argue that if firms with strategic deviation employs upper echelons with older age, the prudent upper echelons may attenuate firm’s operating, information and agency risk, which in turn may lower creditors risk premium on strategic deviation firms. Therefore, we propose that hiring upper echelons with overseas experience and senior age may mitigate the positive relationship between strategic deviation and cost of debt financing.

The remainder of this paper is organized as follow. Section 2 presents the data and variable description. Section 3 discusses the methodology of the paper. Section 4 provides results and discussion in detail. Section 5 concludes the paper.

1. **Data and variable description**

Our sample construction starts with all publicly traded firms on the Shanghai and Shenzhen Stock Exchanges for the period from 2007 to 2018. We selected 2007 as the first year in our sample because all Chinese public firms were mandatory to adopt the Chinese version International Financial Reporting Standards (IFRS) in that year. All data used in this study are from the China Securities Markets and Accounting Research Database (CSMAR) and Wind. After excluding all missing variables, there are 20,489 firm-year observations in our final sample. We exclude the financial firms and Special-Treatment (ST) firms from the sample for their different line of business, operating procedures, regulatory requirements, the extent of liquidity and financing needs.

**2.1 Dependent variable: cost of debt financing**

We measure the cost of debt financing (*CODit*) by the ratio of interest expense incurred by a firm in a year divided by short-term loans, long-term loans, and bond payables in the same year (Limet al*.*, 2018, Zou and Adams, 2008). We then multiply the ratio with 100 to convert the cost of debt into percentage form.

**2.2 Independent variable: strategic deviation**

To measure the strategic deviation of a firm (SDit), we follow Geletkanycz and Hambrick (1997) and use an aggregate value of the following ratios to estimate the strategic deviation: (1) R&D intensity (*R&D* expense/sales); (2) advertising intensity (advertising/sales); (3) newness of plant and equipment (net plant and equipment/gross plant and equipment); (4) capital intensity (fixed assets/number of employees; (5) financial leverage (total debt/equity); and (6) overhead efficiency (selling, general and administrative expenses/sales). Before aggregation, we standardize the values of each ratio and then estimate the absolute values (Dong et al., 2019; Ye et al., 2018; and Geletkanycz and Hambrick, 1997). The final measure is a single average score of the absolute values of the six standardized ratios.

**2.3 Moderating variable: risk perspectives**

We use multiple factors to study the effect of each type of risk perspective on the cost of debt. *First*, to study the “*operating risk mechanism*,” we concentrate on “*market position, operating return volatility, stock return volatility, and current-year loss*.” We argue that firms with high market positions can recruit more commercial credits from upstream and downstream stakeholders. It is not only because that firms with high market positions have stronger bargaining power, but also that firms with higher market positions have lower operating risks. Therefore, upstream and downstream partners could provide funds for high-market position firms with ease; it also means that high market position firms can further reduce themselves owning operational risk by taking up other people’s money and dispersing their own operational risks into the upstream and downstream industry chains. If a firm is of high strategic deviation, but at the same time it has a strong market position, having a larger market share in the industry, can occupy the interest-free commercial credits of upstream and downstream. It will undoubtedly be favored by debt investors and will be able to obtain funds at a lower cost. In sum, the firms owned by private, with a lower market position, and loss in presence, the creditor is more likely to demand a higher risk premium from strategic deviation firms. We use these four aspects in equation (2) to represent operation risk. Operating loss (LOSSit) is measured by a dummy variable that is equal to ‘1’ if a firm has a negative operating profit and ‘0’ otherwise. Market power (MPit) is measured by revenue of a firm divided by the industry revenue, operating return on assets volatility (SD\_OROAit) is measured as standard deviation of operating return on assets over the three years, and stock return volatility (SD\_RETit) is the standard deviation of monthly stock return of the certain firm in given year (Shahab et al., 2020).

*Second*, to study the “*information risk mechanism,”* we focus on “*accruals, BIG4 dummy and analysts following a firm*”. The lower levels of information asymmetry between enterprises and external markets reduce the transaction costs of enterprises and markets. On the occasion that the corporate strategy is quite different from the industry norm, external investors need to spend more time and energy to understand the firm’s corporate strategy and understand its business management model. However, if the enterprise has a lower information asymmetry and a higher earnings quality, then the external creditors and investors are able to conduct due diligence with higher efficiency and lower risk, which can reduce the debt financing cost of the enterprise to a certain extent. To increase the informational inefficiency, a firm can reduce the accruals, audit its records from renowned auditors, and increase the analyst following. In sum, the firm with a higher accruals management, not audited by *BIG4* and less analyst following are more likely to face higher risk premium on strategic deviation. Analyst’s coverage (ANAit) is measured by the natural logarithm of one plus the total number of analysts making earnings forecasts, Big four auditors (BIG4*it*) is measured dummy variable equals to one if the auditor of the firm is one of the four big auditors and zero otherwise, and Discretionary Accruals (DAit) is measured by the absolute value of discretionary accruals estimated by using Modified Jones Model (Dechow et al., 1995). The definitions of the variables are from Shahab et al. (2020).

*Third*, to study the agency risk mechanism, we focus on CEO power, institutional ownership and largest shareholder (concentration). We assume that in a firm with lower agency risk, the creditors are more willing to provide debt resources at a lower risk premium. The firms with higher CEO power are more prone to shirking behavior on the part of management, and the institutional investors and concentrated shareholding are more active as compared to individual investors and dispersed shareholding. Therefore, we assert that a firm with a powerful CEO, and higher institutional and concentrated shareholdings, is more likely to face a lower risk premium on strategic deviation behavior. CEO power (CEOPit) is measured by the CEO's total compensation divided by the combined total compensation of the top-three executives (including the CEO) in each firm, largest shareholder (TOP1*it*) is measured by the number of shares owned by the largest shareholder divided by the total number of shares, and institutional shareholders (INSTit) is measured by the shares owned by institutional investors divided by the total number of shares.

**2.4 Moderating variables: governance perspective**

Following Zhang et al. (2018), we use chairman overseas work experience (CHOWit) measured by a dummy variable equals to one if a firm’s chairman has overseas work experience and zero otherwise and CEO overseas work experience (CEOWit) measured by a dummy variable equals to one if a firm’s CEO has overseas work experience and zero otherwise. Following Serfling (2014) and Waelchli and Zeller (2013), we use chairman age (CHAGEit) that is measured by by a dummy variable that is equal to one if the chairman’s age is higher than the industry-year median age and zero otherwise, and CEO age (CEOAGEit) that is a dummy variable that is equal to one if the CEO’s age is higher than the industry-year median age and zero otherwise. Following Rose (2005) and Heyden et al. (2017), we introduce board member’s average age (BAAit) as dummy variable that equals one if the board members average age is higher than the industry-year median age and zero otherwise and, top management team (TMT) average age (TMTAAit) as a dummy variable that equals one if the board members average age is higher than the industry-year median age and zero otherwise.

**2.5 Control variables**

We include a number of control variables to account for firm-level characteristics in the model (Kim and Lu, 2011, and Shailer and Wang, 2015). For instance, (1) the size of a firm (*SIZEit*) (measured by the log of total assets), (2) leverage (*LEVit*) (measured by total debt to total assets ratio), (3) operating return on assets (O*ROAit*), (4) firm’s growth (*GRit*) (measured by growth in firm revenues), (5) Market to book ratio (MB*it*) (measured as the market value divided by the book value of a firm), (6) Firm Age (FAGEit) (measured by the natural logarithm of the number of years since the firm was founded). In addition, we control for the state-owned enterprise (*SOEit*) as a dummy variable defined as equal to ‘1’ for a state-owned firm and ‘0’ otherwise. We also control for the corporate governance variable. We use board size (BSit) defined as natural logarithm of total number of board members and independent directors (INDit). All the variables have been defined in Appendix A of the study.

1. **Econometric methodology**

We use the regression analysis to examine the strategic deviation of a firm from the industry norms as a determinant of its cost of debt. The relationship between strategic deviation and the cost of debt can be given by the following simple regression model:

Where ‘*i*’ represents firm, and ‘*t*’ represents year, *CODi,t+1*is the cost of debt, *SDit* is the strategic deviation of a firm, *Cit* is a vector for all the firm related control variables, Fi is a vector of time-invariant variables representing the industry of the firm, Yt is a vector for the year dummies, and εit represents the error term. Cit includes firm’s size (*SIZEit*), leverage (*LEVit*), operating return on assets (O*ROAit*), firm’s growth (*GRit*), Market to book ratio (MB*it*), Firm Age (FAGEit), state ownership dummy (*SOEit*), board size (BSit), and independent directors (INDit). Equation (1) provides a general model for the effect of the strategic deviation of a firm on the cost of debt. To study the effect of strategic deviation on the cost of financing via operational, informational, and agency debt risks, we modify the equation (1) to include the interaction term as given below:

Where ‘*i*’ represents firm, and ‘*t*’ represents year, CODi,t+1 is the cost of debt, SDit is the strategic deviation of a firm, *PRit* is a vector of variable representing the “prospective risk factor”, *Cit* is a vector for all the firm related control variables, *Fi*is a vector of time-invariant variables representing the industry of the firm, *Yt* is a vector for the year dummies, and *εit* represents the error term. *Cit* contains the same control variables as in equation (1). *The vector PRit* contains operating loss (LOSSit), market power (MPit), operating return on assets volatility (SD\_OROAit), and stock return volatility (SD\_RETit) in case of operational risk perspective. It contains analyst’s coverage (ANAit), big four auditors (BIG4*it*), and discretionary accruals (DAit) in case of informational risk perspective. It contains CEO power (CEOPit), largest shareholder (TOP1*it*), and institutional shareholders (INSTit) in case of agency risk perspective.

To further test the moderating role of the characteristics of the upper echelons, we modify the equation (1) to include the upper echelons variables as follows:

Where ‘*i*’ represents firm, and ‘*t*’ represents year, CODi,t+1 is the cost of debt, SDit is the strategic deviation of a firm, UE*it* is a vector of variable representing the “upper echelon factors”, *Cit* is a vector for all the firm related control variables, *Fi*is a vector of time-invariant variables representing the industry of the firm, *Yt* is a vector of the year dummies, and *εit* represents the error term. *Cit* contains the same control variables as in equation (1) and (2).UEit is a vector of variables that contains chairman overseas work experience (CHOWit), CEO overseas work experience (CEOWit), Chairman age (CHAGEit), CEO age (CEOAGEit), Board average age (BAAit), top management team (TMT) average age (TMTAAit).

1. **Empirical Findings and discussion**

**4.1 Descriptive statistics and correlation results**

Table 1 presents the descriptive statistics of the variables in Panel A and tests for the difference in mean and median of the variables in Panel B. The summary statistics show that the on average the cost of debt, i.e., interest rate paid by Chinese firms is 6.072% with the 25th percentile value of 3.815% and the 75th percentile value of 7.045%. The *SDi*t variable has a mean value of 0.593. It shows that on average Chinese firms show strategic deviation of 0.593 from the industry. The mean value of *SIZEit* is 22.485, and the standard deviation is 0.986. The average leverage of Chinese firm is 0.474, and median values are 0.470. It shows that on average Chinese firms have 53% of equity financing and 47% of debt financing. It expresses the less risk appetite of the Chinese firms. The *OROAit* has a positive mean value that shows that on average Chinese firms are profitable. The O*ROAit* has a normal distribution; the mean and median of O*ROAit* are quite close, i.e., 0.040 and 0.035, respectively. On average, almost half of the Chinese firms are state-owned enterprises in the studied sample. The BS*it* has a mean value of 2.273 and INDit has a mean value of 0.371. BS*it* is the log of the total size of the board while INDit is the ratio of number of independent directors to total board size. FAGEit shows a mean of 3.087 with a standard deviation of 0.241. The mean value of 0.236 shows the average growth of the Chinese firms during the period studied. The MB*it* has a mean value of 3.927 that shows that average market values are 3.927 times higher than the book values of Chinese firms.

In panel B of Table 1, we compare and present the mean and median of the subsamples based on the small and large strategic deviation. We divide the sample into two subsamples based on the median value of strategic deviation. The means and medians for all the variables are presented in the column (1) to column (4) for the large and small strategic deviation respectively. Column (5) shows the t-tests for the difference in mean and column (6) shows the Wilcoxon test for the difference in median. It shows a significant difference between the means of cost of debt, operating return on assets, leverage, size of the firm, board size, firm age, independent directors, and growth of the firms while insignificant only for the state-owned enterprise dummy. Further, it shows significant difference in median for operating return on assets, leverage, size of the firm, board size, firm age, independent directors, and growth of the firms; whereas, the cost of debt and state-owned enterprise dummy are insignificant.

*INSERT TABLE 1 ABOUT HERE*

We estimate both the Pearson and Spearman correlation coefficients for all the variables. The correlation between most of the variables is significant at 10% level. The correlation between the variables of our primary interest is also significant at 10% level with a Pearson coefficient of 0.05 and Spearmen coefficient of 0.02. The correlation coefficients, along with the significance, are presented in Table 2 of the study.

*INSERT TABLE 2 ABOUT HERE*

**4.2 Regression analysis**

***4.2.1 The impact of strategic deviation on cost of debt financing***

We examine the effect of strategic deviation on the cost of debt by setting up and estimating a regression model. Table 3 shows the results of the estimated regression models.In Table 3, Model (1) presents the ordinary least square (*OLS*) estimates for strategic deviation as the only independent variable. It displays a positively significant effect of strategic deviation on the cost of debt of a firm with a coefficient of 0.864. It shows that a one unit increase in strategic deviance can lead to 0.864% increase in the cost of debt. In specification (1) we use only the strategic deviance and controls for the industry fixed effect and year fixed effect. In specification (2), we estimate our preferred full model with all the available control variables. The strategic deviance remains significant at 1% level with a coefficient of 0.652. It shows that a one unit increase in the strategic deviance will lead to 0.652 percent increase in the cost of debt. The positive and significant coefficient in both specifications represents that an increase in the strategic deviance of a firm (from the industry norm) leads to increase in the cost of debt. In specification (2), we control for the operating return on assets, state ownership, leverage, size of the firm, board size, firm age, independent directors, growth of the firm, and market-to-book ratio.

*INSERT TABLE 3 ABOUT HERE*

***4.2.2 Robustness test: The impact of strategic deviation on cost of debt financing***

We perform three different robustness tests to validate the relationship between the strategic deviance and the cost of debt. We present the robustness tests in Table 4. First, we use two alternate measures of strategic deviance and present the results in specification (1) and specification (2) of Table 4. In specification (1), we introduce a dummy variable created based on the median value of the strategic deviance and in specification (2) we use four indicators instead of six indicators (exclusive of advertising intensity and R&D intensity) to measure the strategic deviance. We follow Tang (2011) in this respect. Second, we also estimate a fixed-effects model in specification (3) of Table 4 for the original strategic deviance measure use in this study. The strategic deviance remains positively significant at 5% level in all the three specifications. It suggests a positive relationship between the strategic deviation and the cost of debt. In this model, we also use the year effects along with the firm fixed effects as control variables.

*INSERT TABLE 4 ABOUT HERE*

***4.2.3 Endogeneity results***

Since, strategic deviance is measured by calculating the average of the six distinct ratios that include the leverage ratio, i.e., total debt/equity in its construction. One can argue that presence of leverage ratio in the strategic deviance can lead to a potential problem of endogeneity in the model. Therefore, we also tested for the presence and potential influence of endogeneity in the model. We re-estimate the model using two-stage least square and present the estimates in Table 5. Following (Ye *et al.*, 2018), we use CEO cash compensation (CASHCOMPit) and CEO tenure (TENUREit) as instrumental variables (IVs) for the strategic deviance (SDit) as they are more likely to affect strategic deviation (e.g., Carpenter, 2000) but are less likely to directly influence the cost of debt. Specification (1) in Table 5 shows the first stage estimates and specification (2) presents the second stage estimates. The strategic deviation remains significant in the model. The endogeneity tests, i.e., Durbin-Wu-Hausman test and overidentification test validate the model and the findings.

***4.2.4 Results for different risk mechanisms***

The cost of debt is derived from the risk inherited in the firms, i.e., higher the risk higher the cost of debt. Therefore, we test for moderation by the three different types of risks, namely, operational risk, information risk, and debt agency risk in the relationship of strategic deviation on the cost of debt. We use different measures for each risk category to study their influence. We present the results separately for each type of risk below.

1. *Operational risk mechanism*

In case of operational risk, Table 6 presents the estimates of the model. Specification (1) in Table 6 use a dummy variable (*LOSSit*) that is equal to ‘1’ if a firm has a negative operating profit in the current year and ‘0’ otherwise. A negative operating profit indicates higher operational risk. The main effect of strategic deviation and the interaction term are significant; however, the operational loss dummy variable is insignificant. It shows a positive significant association between the strategic deviation and a positive significant interaction term of strategic deviation with operational loss dummy. It is worth noticing that a one unit change in strategic deviation leads to 0.399% change in the cost of debt and aa firm with an operational loss the effect becomes 1.195% (= 0.399%+0.796%). Therefore, the operational loss intensifies the positive association between the strategic deviation and the cost of debt. In specification (2) and specification (3), we use variations in the operating profit to assets ratio and variations in the equity returns to measure the operational risk, respectively. We find significant interaction term and the operating risk proxy variables; however, strategic deviation is significant in specification (3) only. It also signifies the moderating role of operational risk in the relationship between strategic deviation and the cost of debt. It shows that a one unit increase in SD\_OROAit (SD\_RETit) amplifies the effect of strategic deviation on the cost of debt by 0.990% (0.561%). Specification (4) uses the market position of the firm to measure the operational risk. The measurement is the ratio of firm revenues to total revenues of the industry. It shows a positively significant coefficients on the strategic deviation and market position variables, and a negatively significant coefficient on the interaction term. Firms with higher market power are more likely to have stronger bargaining power and can recruit more commercial credit from upstream and downstream partners. Higher market power can provide funds with ease at lower margins. It means that these firms can share their operational risk to upstream and downstream partners and use funds of others to reduce their operational risk. The estimates demonstrate that a one unit increase in strategic deviation leads to 0.875% lower cost of debt with each unit increase in the market position.

In a nutshell, using the four individual proxies for the operational risk, we find a significant influence of operational risk on the relationship of strategic deviation on the cost of debt of a firm. In fact, the operational risk augments the positive relationship between the strategic deviation and the cost of debt. It is significant after controlling for the year and industry effects.

*INSERT TABLE 6 ABOUT HERE*

1. *Information risk mechanism*

We test for the role of enterprise information risk in shaping the relationship of strategic deviation with the cost of debt. Table 7 presents the estimated results. Specification (1) presents the estimates for the number of analysts following a firm as a first measure of the information risk. We find a significant effect of both strategic deviation and the number of analysts following a firm. It depicts that a one unit increase in the strategic deviance leads to 0.676% increase in the cost of debt and one 1% increase in the number of analysts following a firm brings down the cost of debt by 0.734%. It supports the conjecture that an increase in the number of analysts following a firm leads to more information available to the investors about the firm. The interaction term is also significant and as expected negative in the model. It shows that a 1% increase in the number of analysts following a firm leads to 0.734% less cost of debt for the given level of strategic deviance. Hence, we infer that an increase in the information about a firm reduces the effect of strategic deviation on the cost of debt. In column (2), we use a dummy variable for the firms with financial statements audited by the big four auditors. Again, both the main effects and the interaction term are significant in this specification. It demonstrates that the cost of debt is 1.745% for a firm who has auditor from the big four auditing firms for a given level of strategic deviation. It signifies that big four auditors assure financial transparency that premises less information asymmetry in the market about the firm and reduces the effect of strategic deviation on the cost of debt. Column (3) presents estimates for absolute accruals used as a measure of earning quality. We use the model of McNichols (2002) to estimate the absolute abnormal accruals from the annual industry regressions. In this specification, the strategic deviation is insignificant, but the discretionary accruals and the interaction term are both significant. It shows that a unit increase in the discretionary accruals leads to 0.909% higher cost of debt for a given level of strategic deviation. Thus, the increase in information asymmetry augments the cost of debt for a firm. Previously different studies have found that abnormal accruals represent information asymmetry and investors to take advantage of this asymmetry to earn a profit (Hirshleifer et al. 2011).

To conclude, low information risk and good information environment can help reduce information asymmetry between enterprises and external markets, and therefore reduce transaction costs for the enterprise within financial markets. The availability of enterprise information allows investors to make efficient and certain decisions. When the enterprise has a lower information asymmetry and a higher earnings quality, then the investors can conduct due diligence with higher efficiency and lower risk, that reduces the impact of strategic deviance on the debt financing cost of the enterprise.

*INSERT TABLE 7 ABOUT HERE*

1. *Agency cost mechanism*

we hypothesize that the influence of strategic deviation on the cost of debt of firms may vary with the different level of enterprise agency risk faced by the firms. To test for this hypothesis, we measure the agency risk by the shares owned by institutional investors to total number of shares (*INSTit*), CEO's total compensation divided by the combined total compensation of the top-three executives (including the CEO) in each firm (CEOPit), and the number of shares owned by largest shareholder divided by the total number of shares (TOP1it). We expect that higher CEO power, and the absence of institutional investors or shareholding concentration increase the agency risk in a firm and the higher agency risk leads to higher demand for risk premium by the creditors. We estimate the individual regression model for each measure of agency risk. We introduce these measures as the main independent variable and as an interaction term with the strategic deviation in the model. The estimated output are presented in Table 8.

The Model (1) of Table 8 presents the results for the CEO power as an explanatory variable in the model. The strategic deviation is insignificant in the model; however, the interaction term of strategic deviation with CEO power is positively significant at 1% level. It indicates that 1% increase in the power of CEO leads to a 0.141% increase in the cost of debt for a given level of strategic deviance. Therefore, in the firms where the CEO’s power is higher, the relationship between strategic deviation and the cost of debt becomes stronger. The CEO power variable is itself negatively significant at 5% level with a coefficient of -0.708. For the shareholder concentration, Model (2) of Table 8 presents the estimated output for the equation (2). The strategic deviation is significant at 1% level and carries a coefficient of 1.055. It shows that an increase the strategic deviance increases the cost of debt. However, it is an interactive model and we should consider the interaction term while interpreting the main effects. The coefficient on the interaction term is negative and significant at 1% level. It demonstrates that with a 1% increase in the percentage of shareholding of a single owner, it reduces the effect of strategic deviance on the cost of debt by 1.011%. Main effect of the top shareholder variable is insignificant in the model. We deduce that the shareholding concentration reduces the effect of strategic deviance because the shareholding concentration incentivise the largest shareholder to be more informed as compared to small shareholders and hence, reduces the agency risk of the firm. We use institutional shareholder ratio in Model (3) of Table 8 and present the results, accordingly. The strategic deviation is significant, with a coefficient of 1.118 at 1% level. It demonstrates that an increase in the strategic deviation leads to a higher cost of debt for the firms. The institutional investor ratio is also significant at 5% with a positive coefficient of 0.354. Whereas, the interaction term of intuitional investors with the strategic deviation is negatively significant at 1% level. It shows that the positive relationship of strategic deviation with the cost of debt of firm weakens with the increase in the institutional investors. The institutional investors decrease the agency risk because they are more informed and have more resources to collect information on the firm risk and return.

*INSERT TABLE 8 ABOUT HERE*

***4.2.5 Results for upper echelon characteristics***

Table 9 presents the results for the moderating role of upper echelons in the relationship of strategic deviation and the cost of debt. In columns (1) and (2), we add Chairman Oversea Work experience and CEO Oversea Work experience and their interactions with strategic deviation, respectively. As expected, interactions in both columns are negatively significant at 10% level. It demonstrates that a firm with Chairman (CEO) with an overseas experience leads to reduced cost of debt by 0.940 (1.183) as compared to other firms whose Chairman (CEO) lacks overseas experience. It is consistent with the view that hiring directors and managers with overseas experience is able to mitigate the positive relationship between strategic deviation and cost of debt. In columns (3) and (4), we add Chairman Age and CEO Age, and their interactions with strategic deviation, respectively. As expected, interactions in both the columns are negatively significant at 1% level. It shows that a one year increase in the age of Chairman (CEO) leads to 0.720% (0.764%) lower cost of debt for a given level of strategic deviation. It is consistent with the conjecture that hiring older/experienced chairman or CEO is able to mitigate the positive relationship between strategic deviation and cost of debt. In columns (5) and (6), we introduce average age of board members and average age of TMT and their interactions with strategic deviation, respectively. As expected, we find the negatively significant interaction terms at 1% level. It indicates that one year increase in the average age of the board (top management) leads to 0.770 (0.755) lower cost of debt for the firm for a given level of strategic deviance. It represents that hiring older/experienced directors and managers is able to mitigate the positive relationship between strategic deviation and cost of debt

*INSERT TABLE 9 ABOUT HERE*

1. **Conclusion**

In this paper, we examine the relationship between strategic deviation and cost of debt for a comprehensive set of Chinese listed firms. We document a positive effect of strategic deviation on the cost of debt financing. To address endogeneity concerns, we use an instrumental variable approach that relies on a plausibly exogenous variation in strategic deviation and finds no material inconsistencies.

We further explore three possible underlying risk mechanisms through which strategic deviation affects the cost of debt. We find that strategic deviation increases the cost of debt financing through operational risk, informational risk, and agency debt risk as well. Investors/creditors consider that strategic deviation from industry norms raises operational risk, informational risk, and agency debt risk of the firms; however, we show that these three risk mechanisms magnify the impact of strategic deviation on the cost of debt when they interact with the strategic deviation. Our additional analysis depicts that the distinct characteristics of upper echelons (i.e., overseas experience and age) are key factors which mitigate the relationship between strategic deviation and cost of debt. This paper provides a rigorous empirical study to examine the role of strategic deviation on the cost of debt financing.

Finally, whilst our results are important and robust, their limitations need to be explicitly acknowledged. For example, we have used secondary data for the analysis; however, in line with the archival studies like this one, our proxies for strategic deviation, debt, and cash flow, amongst others, may or may not reflect practice. Future research may, therefore, improve our findings by conducting in-depth interviews with bankers, managers, and investors to gain further insights. Similarly, our study focuses on Chinese firms only, which may arguably limit the applicability of our findings to other contexts. Future studies may, thus, offer new insights by conducting a cross-country study that will draw on samples of firms from different countries. Finally, future studies may improve upon our framework by drawing on other theories, such as signalling and resource dependence theories in framing their analysis.

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