Research on the Influence of Top Management Team Faultline on Listing Corporations' Cost of Debt

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Abstract. Lowering corporate debt costs can maximize business benefits and is a crucial strategy for ensuring the healthy and sustainable development of enterprises. In this paper, we systematically investigate the impact of executive fault-lines on the debt costs of publicly listed companies. We select data from Chinese publicly listed companies spanning from 2002 to 2019 as our research sample and find that the presence of executive fault-lines significantly contributes to lowering the debt costs for publicly traded firms. Importantly, this effect is markedly enhanced when the companies are subject to greater scrutiny from external stakeholders.

Keywords: cost of debt, executive fault lines, external attention

1   Introduction

Debt financing is an important external funding source for publicly listed companies in China, thus reducing corporate debt costs is a key strategy for maximizing shareholder value and promoting sustainable corporate growth. The executive team plays a crucial role in a corporation's internal governance, significantly influencing its growth and development. Since Lau and Murnighan introduced the concept of faultlines in 1998[1], exploring the impact of diverse team characteristics, there has been a wealth of research, both domestically and internationally, investigating the influence of executive faultlines on corporate governance. Numerous studies have found that the presence of executive faultlines can have a positive impact on performance[2-3]. However, studies by researchers such as Ming et al. (2018), and Liu et al. (2019) have drawn opposite conclusions, finding that executive faultlines can lead to weakened oversight functions and reduced decision-making efficiency, which in turn can significantly negatively impact a company's performance[4-5]. Additionally, some studies have shown the moderating effect of environmental conditions on the impact of faultlines on performance, indicating that their effects can vary across different market and competitive situations[6]. Despite this extensive body of research, the specific influence of executive faultlines on corporate debt costs has been largely overlooked, presenting a promising area for further investigation. In this paper, we seek to address this gap by exploring the impact of executive faultlines on the debt financing costs of publicly listed

companies, examining whether this relationship is positive or negative, and investigating how it may vary under different levels of external oversight and public scrutiny. We aspire that our results will enhance the existing literature on executive faultlines and offer meaningful guidance to those in management roles.

2 Theoretical Analysis and Research Hypotheses

Liang Shangkun et al. (2020) find that fault lines within a management team not only diversify its knowledge base but also enhances its supervisory capabilities[7]. The "divisive" relationships between subgroups can act as a system of checks and balances within the management, leading to stricter internal supervision levels. According to the theories of information asymmetry and principal-agent, creditors demand a higher risk premium when faced with information and agency risks. A higher level of governance can mitigate some of the creditors' risks, thereby reducing the costs that companies pay for information and agency risks, which in turn is reflected in the reduction of listed companies' debt costs[8]. Furthermore, the presence of executive fault lines facilitates a multi-perspective approach to problem-solving by the executive team, enabling a deeper understanding of the company's operations and market environment, better strategic planning, reduced operational risks, and increased investor confidence, thereby indirectly reducing the company's debt costs.

Based on the above analysis, this paper posits that executive fault lines can reduce corporate debt costs, leading to the following hypothesis:

Hypothesis 1: The presence of executive fault lines helps to reduce the debt costs of listed companies.

According to the theory of information signaling, companies send signals to the outside world through their operational and management activities, such as their operational status, development prospects, and market value. These signaling actions can influence investors' decisions, affecting the risk premium required and, consequently, the cost of debt. The existence of executive fault lines may send positive signals to the market, suggesting a management team's diversity in skills and experiences, which could lead to lower costs of debt financing. Furthermore, When a company receives high external attention, the transmission of information becomes broader, more timely, and comprehensive, enhancing the efficacy of the information signaling mechanism. Therefore, the second hypothesis of this study is formulated as follows:

Hypothesis 2: The effect of executive fault lines in reducing the debt costs of listed companies becomes more significant when the company receives heightened external attention.

3 Data and Empirical Model

3.1 Data

Drawing on the research by Qiu et al. (2022), the COVID-19 pandemic has had a significant impact on the global economy, causing notable changes in the debt scale, costs,

and repayment capabilities of many companies[9]. Consequently, data from the year 2020 and beyond may lack comparability. Therefore, we focus on Chinese A-share publicly listed companies from 2002 to 2019 to examine the impact of executive fault-lines on corporate debt costs. Following the methodologies adopted in relevant literature, we process our data according to the following principles: (1) Exclude samples with missing variables; (2) Exclude data from financial sector companies due to their unique characteristics; (3) To mitigate the influence of outliers, we perform winsorization on all continuous variables. After processing, we get 11,339 data entries for empirical analysis.

3.2   Variable Description

Debt Cost: we calculate debt cost using the formula: Finance Costs / (Short-term Borrowings + Long-term Borrowings + Long-term Borrowings Due Within One Year + Bonds Payable).

Executive Faultlines (FLS): to delineate executive faultlines, we selects five personal characteristics of executive team: gender, age, education, professional background, and tenure. Following the analytical framework presented by Shaw et al. (2004), the FLS index is given by the following formula. In the formula: IA represents intra-group similarity, (1−CGAI) represents inter-group diversity. The index spans from 0 to 1, with higher values denoting increased faultlines strength[10].

$$FLS=IA \times (1-CGAI) \tag{1}$$

External Attention: In this paper, external attention is defined as the total number of analysts (or teams) who have undertaken follow-up analyses on the sample company during a given year. Employing a tertile approach, companies ranked in the top third for the number of follow-up analyses in each year are classified as having low external attention, while those in the bottom third are considered to have high external attention. This categorization facilitates the investigation of how differences in external attention levels impact the effect of executive faultlines on debt costs through grouped regression analysis.

Aligned with the findings from existing literature, our model incorporates a set of control variables, including an auditor quality dummy variable (Big_N), firm size (Size), financial leverage (Leverage), return on assets (ROA), growth opportunity (Growth), the proportion of tangible assets to total assets (PPE), interest coverage ratio (Interest), a dummy variable for losses (Loss), and the percentage of shares held by the largest shareholder (Top1). Additionally, the model accounts for fixed effects at both the annual (Year) and industry levels (Industry). To mitigate the potential clustering effects at the firm level on standard errors, we cluster standard errors at the firm level. Table 1 provides the descriptive statistics for the primary variables.

Table 1. Descriptive Statistics of Key Variables

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
DebtCost	0.062	0.056	0.038	0.010	0.199

FLS	0.176	0.186	0.108	0.000	0.375
Big_N	0.527	1.000	0.499	0.000	1.000
Size	21.774	21.681	1.443	18.731	24.889
Leverage	0.518	0.516	0.173	0.200	0.863
ROA	0.028	0.027	0.041	-0.171	0.120
Growth	0.148	0.106	0.281	-0.389	1.714
PPE	0.358	0.265	0.304	0.009	1.494
Interest	8.639	3.850	12.785	-85.767	66.299
Loss	0.120	0.000	0.326	0.000	1.000
Top1	34.783	33.080	14.181	12.810	63.780

3.3   Empirical Design

We construct the following regression model to test Hypothesis 1:

$$DebtCost_{t,i} = \alpha_0 + \alpha_1 FLS_{t,i} + \alpha_i Controls_{t,i} + Fixed\ effects + \varepsilon_{t,i} \qquad (2)$$

The dependent variable, $DebtCost_{t,i}$, represents the debt cost of company i in year t. The core explanatory variable, $FLS_{t,i}$, represents the executive faultlines score for company i in year t. $Controls_{t,i}$ represents control variables for company i in year t. $Fixed\ effects$ represents the fixed effects account for annual and industry. $\varepsilon_{t,i}$ is the random error term. α_1 captures the total impact of executive faultlines on the debt costs of publicly listed companies. In line with Hypothesis 1, α_1 is expected to be negative.

4   Empirical tests and Analysis of Results

4.1   Basic Regression Results

Table 2 presents the regression outcomes assessing the impact of executive faultlines on debt costs[1]. Column (1) shows results of a regression that controls for industry and year fixed effects and clusters standard errors at the firm level, without including control variables. Column (2) shows results from a regression that does not control for industry and year fixed effects, does not cluster standard errors at the firm level, but includes control variables. Column (3) shows results from a regression that controls for industry and year fixed effects, clusters standard errors at the firm level, and includes control variables. Across these regressions, the estimated coefficients for executive faultlines are consistently negative, recorded at -0.009, -0.014, and -0.008, and are significant at the 5% level. The consistent negative estimated coefficients between executive faultlines and debt costs suggest a negative correlation between executive faultlines and the debt costs, regardless of the inclusion of control variables or the control for industry and year fixed effects, thus supporting Hypothesis 1 of our study.

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[1]   Due to space limitations, the regression parameters of the control variables are not presented.

Table 2. Regression Results on the Impact of Executive Faultlines on Debt Costs

Dependent Variable	DebtCost	DebtCost	DebtCost
FLS	-0.009**	-0.014***	-0.008**
	(-1.98)	(-3.32)	(-1.98)
R-squared	0.071	0.142	0.188
Industry FE	YES	NO	YES

Note: * *indicates p < 0.05

4.2   External Attention

We define analyst attention as the total number of analysts (or analyst teams) that track a specific sample company within a year. Using the tertile method to classify the data, companies with attention in the top third of the range for the year are defined as having lower analyst attention, and those in the bottom third are defined as having higher analyst attention. Table 3 reports the regression results grouped by analyst attention[2]. Column (1) reports the results when analyst attention is low. The estimated coefficient for executive faultlines of 0.002, but the result is not significant; Column (2) reports the results when analyst attention is high. The estimated coefficient for executive faultlines of -0.016, which is significant at the 5% statistical significance level. The regression results indicate that when a company is subject to a higher degree of external attention, the impact of executive faultlines on reducing the debt costs is more significant, thereby confirming Hypothesis 2 of our study.

Table 3. Regression Results Grouped by Levels of Analyst Attention

	(1)	(2)
	low analyst attention	high analyst attention
	DebtCost	DebtCost
FLS	0.002	-0.016**
	(0.28)	(-2.51)

5   Conclusions

In this paper, we conduct an empirical analysis on the relationship between executive faultlines and the debt costs of publicly listed A-share companies in China from 2002 to 2019. Our findings indicate that: firstly, the existence of executive faultlines is associated with lower debt costs. Secondly, a higher level of analyst attention can enhance the effectiveness of executive faultlines in conveying positive signals, thereby strengthening their role in reducing corporate debt costs. These findings imply that companies can leverage the advantages brought about by the diversity within their executive teams. By fine-tuning the composition of these teams, firms can enhance their internal governance structures. Additionally, companies can also enhance the impact of executive

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[2]   The regression parameters of the control variables are not presented.

faultlines by actively engaging with the investment community and increasing the attention from analysts and investors towards the company.

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