

Research on the Influence of Background Characteristics of Enterprise Executive Teams on Earnings Management

Yifan Yang^{1*}, Xinglei Li², Weiyu Cheng³, Herong Wang⁴, Fan Yang⁵, Na Feng⁶, Yifan Tian⁷

*Corresponding author: 571588807@qq.com

Human Resource Management, Hebei University¹
Accounting, Jilin University of Finance and Economics²
Business Administration, Nanjing University of Finance and Economics³
Tourism management, Nanjing Forestry University⁴
BAdvertising, Ludong University⁵
T Japanese language and literature Bohai University⁶
Preschool Education, Huainan Normal University⁷

Abstract: This study is supported by the upper echelon theory and uses the modified Jones model as a benchmark to measure two types of earnings management strategies: accrual-based earnings management and real earnings management. At the same time, the study examines the impact of the overall background characteristics of the executive team, including age, gender, education level, and financial industry experience, as proxy variables, on the choice of earnings management strategies. The results show that executive teams nearing retirement age and with a higher proportion of female members tend to pursue stability and are reluctant to implement earnings management strategies. Executive teams with higher educational levels are more inclined to implement real earnings management, while those with lower educational levels are more inclined towards accrual-based earnings management. Through this study, empirical evidence is provided for a deeper understanding of earnings management strategies among listed companies, and policy references are provided for regulatory authorities to increase supervision and utilize external audits.

Keywords: Executive Team; Background Characteristics; Earnings Management; Jones Modified Model

1. Introduction

The financial fraud of Kangmei Pharmaceutical caused a sensation throughout the Chinese A-share market. The enormous fines imposed on its independent director repeatedly appeared on Weibo's hot search list, attracting widespread attention from various types of investors. The China Securities Regulatory Commission characterized the incident as a "systematic financial fraud typical case." Financial fraud in the A-share market is not uncommon. Companies such as Luckin Coffee, Kangde Xin, and Zhangzidao scallops have all had cases of financial fraud. It is not difficult to see that cases of executives directly or indirectly authorizing financial fraud occur frequently, taking advantage of their professional backgrounds and exploiting their positions.

The goal of financial fraud is to fabricate performance and make the company's financial statements appear relatively "better," which can then have a positive effect on the stock price. In terms of purpose, executives have ample motivation to embellish financial reports. In comparison to financial fraud, which is illegal, earnings management is more favored by executive teams because of its legality.

Earnings management refers to the deliberate manipulation of financial information reported to external parties by management for personal gain, achieved through discretion over accounting policies, timing of income and expense recognition, and other similar judgments. In existing research, most scholars focus on the impact of CEO's individual background or the relationship between the entire executive team and financial fraud on company performance. Few researchers pay attention to the influence of the entire executive team on the company's earnings management strategy. Earnings management can be divided into two types: accrual earnings management and real earnings management. The former is achieved through profit adjustment using accounting estimates or accounting policy changes and can be measured through discretionary accruals [3]. The latter is more covert, making it difficult for auditors to detect. The main reason is that real earnings management is based on actual transactions and involves changing decisions related to the transaction (such as revenue recognition timing), thus affecting the income statement and cash flow of the company. This behavior is meaningless for company performance, serving only to meet the performance needs of the management team.

There are many factors that influence earnings management, such as company characteristics, audit quality, board of directors, audit committee structure, media exposure, and securities analysis, which can all affect a company's earnings management strategy.

2. Theoretical analysis and hypothesis deduction

This study analyzes the impact of the overall background of executive teams on earnings management strategies of all A-share listed companies through research. Since 1984, the upper echelon theory has been widely recognized by the academic community, which shows that executive background plays a crucial role in corporate performance. The upper echelon theory suggests that the cognitive level and values of top executives have a significant impact on the company's management decisions and results. Steven J. Kachelmeier (2010) holds a similar view, stating that "it is not the company making decisions, but rather the group of highly individualistic people brainstorming for it [5]." Due to the difficulty in obtaining personal psychological test data, this article uses the personal background information of executive teams that can be publicly searched as a proxy variable to measure cognitive bias when evaluating corporate decisions.

In recent years, related research has also demonstrated the influence of executive backgrounds on earnings management. However, most studies artificially separate the overall decision-making of the executive team and focus on the impact of individual CEO or CFO backgrounds on earnings management. Therefore, this study focuses on the overall background characteristics (demographic characteristics) of executive teams and explores their impact on corporate earnings management.

2.1. Age and Earnings Management

As age increases, on the one hand, it enriches life experience, but on the other hand, it also implies a decrease in risk tolerance and a greater tendency to pursue stability and dislike risk. Generally speaking, they have a prominent social status, a good social environment, and a substantial income, so they will do their utmost to avoid aggressive investments and strive to stabilize performance indicators to ensure a smooth transition for the company. Therefore, the first hypothesis proposed by this study is that the more people near the statutory retirement age in the executive team, the less likely they are to engage in earnings management. As the current Chinese law sets the statutory retirement age at 60 for men and 55 for women, this study considers male executives over 55 and female executives over 50 as people near the statutory retirement age, within a limit of 5 years.

H1a: The proportion of people near the statutory retirement age in the executive team is negatively correlated with the likelihood of implementing accrual-based earnings management.

H1b: The proportion of people near the statutory retirement age in the executive team is negatively correlated with the likelihood of implementing real earnings management.

2.2. Gender and Earnings Management

In both behavioral psychology and behavioral finance, studies have shown that gender has a significant impact on risk tolerance. In recent years, most studies have focused on the impact of the proportion of female executives on corporate value. Kevin Campbell (2008) further demonstrated the positive correlation between the proportion of female executives and corporate value [2]. Emilia Peni's (2010) related research also confirmed that female CFOs can provide more accurate and reliable accounting information, and the financial statement quality of their companies is higher than that of other companies with male CFOs [1]. In summary, existing research shows that female executives are more concerned about the authenticity of financial statements than male executives. Therefore, the second hypothesis of this study is as follows:

H2a: The proportion of women in the executive team is negatively correlated with the likelihood of implementing accrual earnings management.

H2b: The proportion of women in the executive team is negatively correlated with the likelihood of implementing actual earnings management.

2.3. Financial Industry Experience and Earnings Management

Ulrike Malmendier's (2011) study suggests that executives with a diverse work background and experience in multiple positions tend to be more confident, proactive, and enterprising [6]. Managers with financial and accounting-related work experience are more familiar with financial regulations and accounting standards and are better at implementing accrual-based earnings management by adjusting accounting policies and estimates to meet their performance needs. Based on their financial and accounting-related work experience, they understand that while actual earnings management may be more covert and difficult to detect, it also poses hidden dangers and risks to the long-term development of the company. Therefore, the third hypothesis of this study is as follows:

H3a: The proportion of executives with financial and accounting-related work experience in the management team is positively correlated with the likelihood of implementing accrual-based earnings management.

H3b: The proportion of executives with financial and accounting-related work experience in the management team is negatively correlated with the likelihood of implementing actual earnings management.

2.4. Education background and earnings management

Compared with actual earnings management, the difficulty and complexity of implementing accrual-based earnings management are higher. The implementation of accrual-based earnings management not only faces restrictions from accounting standards and laws and regulations, but also external supervision from auditing and social opinion. Obviously, high-level education background of the entire management team is more capable of controlling the implementation of accrual-based earnings management. Therefore, this study believes that a management team with a higher overall education level is more motivated and capable of implementing accrual-based earnings management. In contrast, a management team with a lower overall education level tends to implement actual earnings management to achieve its performance targets. Thus, the fourth hypothesis of this study is as follows:

H4a: A management team with a higher overall education level is more likely to implement accrual-based earnings management.

H4b: A management team with a lower overall education level is more likely to implement actual earnings management.

3. Research Design

3.1. Sample selection and data source

This study uses Chinese A-share listed companies from 2011 to 2020 as the research sample. After excluding financial and incomplete data companies, we further remove companies with negative book values, those flagged by the China Securities Regulatory Commission with ST and *ST risk warnings. All continuous variables are also Winsorized to remove outliers in the top and bottom 1%. Data used in this study is sourced from the CSMAR database, and Stata17 is used for data processing.

3.2. Variable Selection and Definition

This study uses the modified Jones model to measure the accrual-based earnings management. The total accruals are calculated as the difference between the non-recurring net profit and the net cash flows from operating activities. TAC_{it} refers to the total average cost, ΔREV_{it} is the incremental amount of operating revenue, PPE_{it} represents fixed assets, A_{it-1} represents the total assets of the company in the previous period. All variables in the equation are adjusted by dividing by A_{it-1} to ensure horizontal comparability across companies. CFO_t represents operating cash flow for each period. S_t represents the sales revenue in year t, ΔS_t is the increment of sales revenue in year t compared to the previous year. $COGS_t$ represents the main business cost of the company in year t, ΔINV_t represents the inventory change in the t year. $PROD_t$ measures

the production cost for the current year, $DISEXP_t$ represents the discretionary expenses of the company in year t .

$$\frac{TAC_{it}}{A_{it-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{it}}{A_{it-1}} \right) + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it} \quad (1)$$

$$\frac{CFO_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \beta_1 \left(\frac{S_t}{A_{t-1}} \right) + \beta_2 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \varepsilon_t \quad (2)$$

$$\frac{COGS_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \beta \left(\frac{S_t}{A_{t-1}} \right) + \varepsilon_t \quad (3)$$

$$\frac{\Delta INV_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \beta_1 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \beta_2 \left(\frac{\Delta S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (4)$$

$$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \beta_1 \left(\frac{S_t}{A_{t-1}} \right) + \beta_2 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \beta_3 \left(\frac{\Delta S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (5)$$

$$\frac{DISEXP_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \beta \left(\frac{S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (6)$$

Table 1: Definition of Variables

Variable name	Variable Description
DA	Earnings management is calculated using the modified Jones model based on formula (1).
PM_DA	Calculated by the Jones model with earnings matching.
RM_CFO	Abnormal operating cash flow, used to measure actual earnings management caused by manipulation of sales, is calculated by formula (2).
RM_PROD	Abnormal production costs, used to measure actual earnings management caused by overproduction, are measured by Formula (5).
RM_DISEXP	Abnormal Discretionary Expenses, used to measure actual earnings management caused by discretionary expenses, calculated by formula (6).
SIZE	Firm size, calculated as the natural logarithm of total assets.
BM	Book-to-Market Ratio, calculated as the ratio of a company's book value to its market value.
LOSS	Dummy variable measures the net loss of the company in the current year. If the net profit is less than 0, it takes a value of 1, and 0 otherwise.
ROE	Return on Equity
LEV	Leverage ratio, enterprise asset-liability ratio.
SG	Sales growth rate.
Age	The proportion of senior management team members (vice presidents and above) who are near retirement (within 5 years of statutory retirement age).
Educa	The average educational level of the management team (where technical secondary school is 1, junior college is 2, undergraduate is 3, master's degree is 4, doctoral degree is 5, MBA and others are 6, and the average value is taken).
Finb	The proportion of executives with financial or accounting-related work backgrounds.
Gender	The proportion of female executives in the management team.

Previous studies have shown that some financial characteristics of a company can also affect its profitability [3]. So, this study also considers these variables as control variables to avoid their potential impact on earnings management. The specific variables are shown in Table 1.

4. Descriptive statistics and correlation analysis.

In the correlation analysis results, the correlation coefficients between the explanatory variables are all less than 0.5, indicating that there is no serious problem of multicollinearity among the variables.

4.1. Empirical Results and Analysis

To test the robustness of the regression results, this study conducted tests using the modified Jones model and the revenue matching Jones model [4]. For mixed data, a cross-sectional regression analysis method was used, while for panel data, a two-way fixed effects model was used to analyze the impact of the overall background characteristics of the management team on the calculated earnings management.

The regression results of high-level management team's overall background characteristics using mixed samples in this study showed that the variable AGE was negatively correlated with the implementation of accrual-based earnings management, and it was significant at the 1% level in both models with t-statistics of -2.82 and -3.44, respectively. This result indicates that as the average age of the management team increases, they are less likely to use accrual-based earnings management strategies, which supports the H1a hypothesis of this study. Since the accrual-based earnings management strategy is very easy to be identified by external audits, with the average age of the management team getting closer to the statutory retirement age, they become more conservative and risk-averse, and naturally, there is no motivation for young executives to implement accrual-based earnings management strategies.

The regression results of the overall background characteristics of the executive team using mixed samples in this study show that the variable "AGE" is negatively correlated with the implementation of accrual earnings management, and it is significant at the 1% level in both models, with t-statistics of -2.82 and -3.44, respectively. This result indicates that as the average age of the management team increases, they are less willing to use accrual earnings management strategies, supporting the H1a hypothesis of this study. Since the accrual earnings management strategy is very easy to be identified by external audits, as the average age of the management team increases and they approach the legal retirement age, they become more conservative and risk-averse, and naturally have no incentive to implement the accrual earnings management strategy compared to younger executives.

Similarly, "GENDER" is also negatively correlated with the likelihood of implementing accrual earnings management, significant at a 5% level with t-statistics of -2.43 and -2.47, supporting the H2a hypothesis of this study. As mentioned in the hypothesis section, female executives are more conservative and responsible compared to their male colleagues. "FINB" is positively correlated with the accrual earnings management strategy, significant at a 5% level with t-statistics of 2.05 and 2.25. This result indicates that executives with relevant financial work

experience are more inclined to implement accrual earnings management strategies, supporting the H3a hypothesis of this study.

"EDUCA" is positively correlated with the likelihood of implementing accrual earnings management strategies, corresponding to DA and PM_DA, significant at the 5% and 1% level, respectively, with t-statistics of 2.41 and 2.87. This result indicates that the higher the education level, the more executives understand how to achieve earnings management through adjusting accounting estimates and policies, and they are more aware that this operation does not affect the company's operating cash flow. Therefore, they are more willing to implement accrual earnings management, which is consistent with the H4a hypothesis of this study.

5. Conclusion

This study examines the impact of the overall background (demographic characteristics) of executive teams on the use and choice of earnings management policies in Chinese A-share listed companies from 2011 to 2020. The results indicate that the executive team's age, gender, work experience, and education level have a significant influence on the selection of earnings management policies. Specifically, as executives near the legal retirement age, they are less willing to use earnings management to increase risks. The higher the proportion of women in the executive team, the stronger the overall social constraints and responsibility of the company, resulting in higher accounting information quality and a lower tendency to adopt earnings management policies. The higher the proportion of executives who have worked in finance and related industries, the more likely they are to adopt accrual-based earnings management strategies. Finally, the average education level of executives also influences the choice between accrual-based and real earnings management strategies.

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