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Customer Concentration and Its Impact on Earnings Management Research

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Abstract: This study is primarily focused on the comprehensive data of Chinese A-share listed companies throughout the period from 2010 to 2021. It conducts a meticulous and empirical analysis to thoroughly explore the substantial influence of customer concentration on corporate earnings management. The research findings clearly demonstrate that customer concentration has a notably significant and detrimental effect, significantly exacerbating the level of corporate earnings management. The in-depth mechanism analysis further reveals that an increase in customer concentration inevitably leads to a heightened operational risk for the company and a substantial augmentation of agency costs. These combined factors consequently provide an impetus and conducive environment for the company to engage in earnings management activities. The conclusions drawn from this exhaustive study not only hold immense guiding significance for the management of companies when formulating strategic market plans and crucial financial decisions but also offer highly valuable reference points for investors when assessing the quality and authenticity of corporate earnings. Such insights are crucial in facilitating more informed and rational decision-making processes within the business and investment domains.

Keywords: Customer Concentration, Earnings Management, Business Risk.

1. Introduction

In the tide of market economy, earnings management, as a means for companies to adjust financial reports, has always been a focal point of attention for both academia and the practical field. It is not only related to the internal decision-making of companies but also affects the judgment of external investors, creditors, and other stakeholders on the value of the company [1]. Therefore, in-depth research on earnings management is of paramount importance for safeguarding market fairness, protecting the interests of investors, and promoting the healthy development of enterprises.

Current literature has explored the influence on earnings management from various perspectives. Some studies focus on the internal governance structure of companies, such as the characteristics of the board of directors and the equity structure, and their regulatory or promotional effects on earnings management. Other research looks at the external market environment, such as the degree of industry competition and macroeconomic conditions, and how these factors influence the earnings management strategies of companies [2]. However, there is a scarcity of in-depth literature on the impact of customer concentration in a company's sales revenue, a key factor in earnings management.

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To further explore the relationship between customer concentration and earnings management, this paper selects Chinese A-share listed companies from 2010 to 2021 as the research sample. Through the data of this period, this study aims to discuss the impact effect and mechanism of customer concentration on earnings management.

2. Literature Review and Research Hypotheses

Some scholars pointed out that, on one hand, a higher degree of customer concentration may lead to an increased dependence on key customers. When there are changes in the needs or cooperative relationships of key customers, the business risks faced by the company increase. To reduce the impact of such risks on financial conditions, companies may use earnings management to adjust financial data, making financial performance appear more stable. On the other hand, a high degree of customer concentration may lead to higher agency costs, such as investing more resources to maintain relationships with major customers, or conflicts of interest due to information asymmetry. To balance these costs, companies may optimize financial reporting through earnings management. This means that in order to meet the expectations of key customers for stable performance and to reduce customers' concerns about the fluctuation of the company's financial conditions, companies may use earnings management to adjust financial data to present a more stable and predictable profit situation [3].

H1:Customer concentration will improve earnings management.

3. Study Design

3.1. Data Sources and Sample Selection

This paper starts with the data of Chinese A-share listed companies from 2010 to 2021 as the initial sample. The following screening steps were taken: (1) excluding samples of ST and *ST companies; (2) removing samples of financial and real estate companies; (3) deleting samples with missing variable observations. After the above screening, a total of 16,070 samples were obtained. The data comes from the CSMAR. In addition, to reduce the impact of outliers, this paper has trimmed the top and bottom 1% of all continuous variables.

3.2. Variable Definitions

3.2.1. Customer Concentration (*CC*)

Drawing on existing literature regarding the disclosure of major customer information [4], this study uses the total sales amount disclosed in the annual reports of listed companies to the top five customers as a proportion of the annual total sales to reflect the company's customer concentration.

3.2.2. Firm's Real Earnings Management (*Dal*)

This paper selects the firm's real earnings management and refers to the models of Dechow and Sugata Roychowdhury for measurement, aiming to comprehensively assess earnings management, truly reflect the actual behavior of enterprises, avoid the limitations of accrual-based earnings management, and meet research needs [5]. The model proposed by Dechow et al. in 1998 mainly focuses on accrual-based earnings management. This model identifies earnings management behavior by analyzing the relationship between a company's earnings, its cash flows, and accruals. Specifically, the Dechow model uses the following formula to represent the relationship between earnings (*E*), cash flow (*CF*), and total accruals (*Accruals*):

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$$E = CF + Accural \tag{1}$$

The model further decomposes accruals into non-discretionary accruals and discretionary accruals, using statistical methods such as regression analysis to separate the discretionary accruals, thereby assessing the degree of earnings management. In Sugata Roychowdhury's 2006 study, the concept of real earnings management was proposed. Roychowdhury's approach focuses on identifying earnings management behavior by analyzing the actual business activities of the company. This method posits that companies can influence earnings by manipulating actual business activities (such as sales, production, and expense expenditures, etc.). Roychowdhury proposed the following formula to calculate the total amount of real earnings management (*REM*):

$$REM_{i,t} = -\left(\frac{ABCFO_{i,t}}{A_{i,t-1}}\right) + \left(\frac{ABPROD_{i,t}}{A_{i,t-1}}\right) - \left(\frac{ABDISEXP_{i,t}}{A_{i,t-1}}\right) \tag{2}$$

In the formula, *ABCFO*, *ABPROD*, and *ABDISEXP* represent abnormal operating cash flow, abnormal production cost, and abnormal discretionary expenses, respectively. By calculating these anomalies, it is possible to assess whether a company engages in earnings management by manipulating actual business activities.

Combining these two models allows for a comprehensive assessment of earnings management practices, encompassing both accrual-based earnings management through accounting estimates and policy choices, as well as real earnings management through manipulation of actual business operations. With this approach, researchers and investors can more accurately identify and measure a company's earnings management activities, thereby making wiser decisions.

3.2.3. Control Variables

Based on the existing related research, this paper introduces the following series of control variables: Firm size (*Size*, the natural logarithm of total firm assets), Leverage (*Lev*, the ratio of total liabilities to total assets), Return on assets (*ROA*, net profit / total assets), Board size (*Board*, the natural logarithm of the number of board members), Ownership concentration (*Top1*, the number of shares held by the largest shareholder / total number of shares of the firm), Main business income growth rate (*Gro*, the difference between current and previous period's operating income / operating income of the previous period), Dual roles (*Dual*, taking 1 if the chairman and general manager positions are held by the same person, otherwise zero), and Ownership nature (*Soe*, taking 1 for state-owned enterprises, 0 for non-state-owned enterprises). In addition, this paper also controls for Year fixed effects (*Year*) and Industry fixed effects (*Industry*) to control for the impact of annual trend changes and industry differences.

3.3. Model Construction

To investigate the impact of customer concentration on corporate earnings management, this paper constructs the following econometric model:

$$Dal_{i,t} = \alpha_0 + \alpha_1 CC_{i,t} + Controls_{i,t} + Year + Industry + \varepsilon_{i,t} \tag{3}$$

In Model (3), *i* represents the individual firm, *t* represents the year; *Dal* is the dependent variable, indicating the real earnings management of listed company *i* in year *t* ; *CC* is the independent variable, representing the customer concentration level of listed company *i* in year *t* ; *Controls* are the main control variables selected in this paper; *Year* and *Industry* represent the year fixed effects and industry fixed effects, respectively; ε is the random error term.

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4. Empirical Analysis

4.1. Baseline Regression

Table 1 presents the main regression results of this study. In column (1), the result of regression with only the core explanatory variable *CC* is shown, with a regression coefficient of 0.149, which is significantly positive at the 1% level. Columns (2) and (3) show the results of regressions with *CC* after including the control variables and year and industry fixed effects, respectively. The regression coefficients are 0.112 and 0.160, both significantly positive at the 1% level. This indicates that Hypothesis H1 of this paper is supported.

Table 1: Baseline Regression Results.

	(1)	(2)	(3)
	Dal	Dal	Dal
CC	0.149***	0.112***	0.160***
	(19.193)	(15.452)	(20.022)
Controls	No	Yes	Yes
Year	No	No	Yes
Industry	No	No	Yes
N	16070.000	16070.000	16070.000
R^2	0.022	0.173	0.189

Note: The numbers in parentheses are t-values, and ***, **, and * respectively indicate significance at the 1%, 5%, and 10% levels, respectively. The same applies below.

4.2. Mechanism Analysis

This study indicates that the mechanism by which customer concentration affects corporate earnings management is primarily reflected in the aspects of operational risk and agency costs, represented by the fluctuation of *ROA* and the asset turnover ratio over a 5-year period, respectively. An increase in operational risk is often accompanied by an increase in the fluctuation of *ROA*, while an increase in agency costs tends to lead to a declining trend in the asset turnover ratio. The fluctuation of *ROA* is measured by calculating the standard deviation of *ROA* over a certain period, with the calculation formula as follows:

$$\sigma_{ROA} = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(ROA_i - aveROA)^2} \tag{4}$$

In the formula: ROA_i is the *ROA* value for the *i*-th year, *aveROA* is the average *ROA* over the observation period, and *N* is the number of years in the observation period [6]. Through regression analysis, it can be found that customer concentration increases the operational risk of a firm, that is, the higher the customer concentration, the greater the operational risk the firm faces. This may be due to the fact that highly concentrated customers have a significant influence on the firm's business decisions, thereby increasing the uncertainty and risk faced by the firm[7]. On the other hand, customer concentration increases the agency costs of a firm, that is, the higher the customer concentration, the higher the agency costs. This may be because high customer concentration can lead to an imbalance of power in transactions with major customers, resulting in profit compression, imbalanced resource allocation, short-sighted decision-making, and information asymmetry, which increases agency costs [8]. In summary, customer concentration affects a firm's earnings management by increasing operational risk and agency costs. This mechanism of influence is established at the 1% significance level. This means that when facing highly concentrated customers, firms need to pay

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more attention to the management of operational risk and reasonably adjust agency costs to ensure the rationality and transparency of earnings management.

Table 2: Mechanism Analysis

	(1)	(2)
	Operational Risk	Agency Costs
CC	0.114***	-0.135***
	(9.795)	(-8.271)
Controls	Yes	Yes
Year	Yes	Yes
Industry	Yes	Yes
N	16070.000	16070.000
R^2	0.052	0.273

5. Research Conclusions and Policy Recommendations

This paper uses data from Chinese A-share listed companies from 2010 to 2021 to study the impact of customer concentration on corporate earnings management. The main research conclusions include: (1) The study shows that there is a significant positive correlation between customer concentration and corporate earnings management. Specifically, when a company has a high degree of customer concentration, its level of real earnings management tends to increase accordingly. (2) Further mechanism analysis reveals the underlying mechanism behind this relationship. The study finds that customer concentration affects earnings management by impacting the company's operational risk and agency costs. A higher degree of customer concentration increases the company's operational risk and agency costs.

Based on the findings of this study, the following policy implications can be drawn: (1) At the corporate level: Enterprises should closely monitor the impact of customer concentration on earnings management. Especially when customer concentration is high, companies need to strengthen internal controls to ensure the rationality and transparency of earnings management. In addition, companies should also enhance risk management to effectively respond to the operational risks brought by customer concentration. (2) At the regulatory level: For non-state-owned enterprises, small-scale enterprises, and enterprises with relatively dispersed equity, regulatory authorities should strengthen supervision of their earnings management to guard against potential risks. At the same time, regulatory authorities should encourage enterprises to improve the quality of information disclosure, allowing investors to have a more comprehensive understanding of the company's earnings situation. (3) At the investor level: When making investment decisions, investors should fully consider factors such as the company's customer concentration to more accurately assess the quality of earnings. Moreover, investors should also urge companies to improve the level of information disclosure to enhance market transparency. (4) At the information disclosure level: To better understand the quality of corporate earnings, it is recommended to further improve the information disclosure system, requiring companies to disclose in more detail the customer concentration and related risks. This will help investors make wiser decisions and is conducive to improving market efficiency and fairness. Through these policy implications, enterprises, regulatory authorities, investors, and market participants can work together to promote the transparency and quality of corporate earnings management, maintain market order and investor rights, and promote sustainable economic development.

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References

[1] *Cao, S. P., Jiang, W., & Shi, C. Y. (2023). Does a major customer enhance or reduce the transparency of the company's supply chain? Empirical evidence based on supplier name information disclosure. Accounting Research, (3), 34-49.*

[2] *Jiang, W., Sun, Y., & Hu, Y. M. (2018). Customer concentration and cost structure decision-making: Empirical evidence from China's relationship-oriented business environment. Accounting Research, (11), 70-76.*

[3] *Wang, X. P., & Shi, C. F. (2024). Research on the quality of voluntary information disclosure under the registration system: Based on the empirical evidence from the Science and Technology Innovation Board from 2019 to 2021. Friends of Accounting, (2), 62-71.*

[4] *Ellis, J. A., Fee, C. E., & Thomas, S. E. (2012). Proprietary Costs and The Disclosure of Information about Customers. Journal of Accounting Research, 50(3), 685-727.*

[5] *Wu, L. S., & Wang, Y. P. (2007). Estimation models and empirical evidence of earnings management degree: A review. Economic Research Journal, (8), 143-152.*

[6] *Xin, C. H., Hao, X. L., & Cheng, L. (2022). Corporate green innovation and stock price synchronicity: From the perspective of operational risk and environmental information disclosure. Finance and Accounting Monthly, (18), 152-160.*

[7] *Li, N., & Li, S. G. (2018). Board members' overseas residence rights, auditor selection, and agency costs: Empirical evidence from state-owned enterprises. Finance and Accounting Monthly, (23), 139-146.*

[8] *Jiang, W., Sun, Y., & Hu, Y. M. (2018). Customer concentration and cost structure decision-making: Empirical evidence from China's relationship-oriented business environment. Accounting Research, (11), 70-76.*