

M&A GOODWILL IMPAIRMENT, MANAGEMENT ABILITY, AND FIRM PERFORMANCE: EMPIRICAL EVIDENCE FROM CHINESE A-SHARES

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ABSTRACT

The Chinese capital market created a large amount of goodwill assets after several waves of mergers, acquisitions, and restructuring. The potential risks posed by these goodwill assets to the continued stable development of the business during subsequent impairments cannot be ignored. This study selects a sample of non-financial listed companies in the A-share market in China for 2007–2021. The results indicate that goodwill impairment significantly and negatively affects firm performance. At the same time, goodwill impairment significantly affects management capability and mitigates the impact of goodwill impairment on company performance by exercising management capability. High-capacity management plays a greater inhibiting role in the relationship between goodwill impairment and corporate performance. The findings of this study validate the management's ability to perform in companies with goodwill impairment under the new accounting standards and also provide reference values on how to reduce the risks associated with goodwill impairment.

Keywords: mergers and acquisitions; goodwill impairment; management ability; firm performance

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INTRODUCTION

In recent years, the "Financial Collapse" phenomenon in goodwill in China's capital market has been frequently observed, which has significantly impacted companies' operations and performance and posed challenges to corporate governance. According to statistics, the number of listed companies in China's A-share market (excluding ST, *ST, and financial

industries) that have experienced goodwill impairment has increased by more than 15 times since 2007. The occurrence of goodwill impairment events has significantly impacted China's capital market and the real economy. To address the risk of goodwill impairment, the China Securities Regulatory Commission (CSRC) released "Accounting Regulatory Risk Alert No. 8 - Goodwill Impairment" in 2018, which reflects

the regulatory authorities' high attention to the issue of goodwill failures and the widespread and serious nature of the issue in the capital market. In 2022, the report of the 20th National Congress of the Communist Party of China emphasized the importance of preventing financial risks by strengthening and improving modern financial regulation, strengthening the financial stability protection system, legally incorporating all types of financial activities under regulation, and guarding against systemic risk.

Regarding the value relevance of impairment losses on goodwill, some scholars have found that such losses can reflect changes in the current performance of relevant assets of a firm (Chen, Kohlbeck, & Warfield, 2008; Qu, Lu, & Zhang, 2017), while others have studied changes in a company's value from a market perspective (Han, Tang, & Li, 2019). Further research has revealed that managers are crucial human resources for a firm and that their abilities can significantly affect corporate decision-making (Yung & Chen, 2018). Depending on factors such as the current Debt covenant or the interests of managers, managers may accelerate or avoid impairment losses on goodwill (Glaum, Landsman, & Wyrwa, 2018), using the flexible space provided by existing accounting standards to make deliberate impairment loss decisions. This also reflects the fact that whether or not a firm recognizes impairment losses on goodwill to some extent depends on the personal judgment of its managers. Managerial abilities significantly influence the quality of a company's earnings (Choi, Han, Jung, & Kang, 2015; Demerjian, Lev, Lewis, & McVay, 2013). However, no scholars have studied the combination of impairment losses on goodwill, managerial abilities, and corporate performance. Therefore, it remains unclear whether managerial abilities play a role in exercising discretion, affecting the relationship between impairment losses on goodwill and corporate performance in the process of the impact of impairment losses on goodwill on corporate performance.

This study aims to investigate the impact of goodwill impairment on firm performance from an accounting perspective while focusing on whether the relationship between goodwill impairment and firm performance changes under the influence of managerial ability and whether high-ability managers and low-ability managers exert consistent effects. This study has

demonstrated the role of management's subjective agency in corporate governance. Theoretical and empirical evidence has been presented to explain the mechanism by which management ability affects the relationship between goodwill impairment and firm performance. This enriches the literature on corporate governance mechanisms and agent heterogeneity and brings research on corporate performance back to a paradigm that values the importance of "people" and focuses on the study of "people".

THEORETICAL STUDIES AND RESEARCH HYPOTHESES

Goodwill Impairment and Firm Performance

According to existing research, it has been found that the occurrence of goodwill impairment can cause real changes in a company's performance (L. Zhang & Feng, 2016). Relevant literature suggests that the creation of goodwill assets may lead to a deterioration in a company's future performance (Du, Du, & Zhou, 2011). For example, the impairment of goodwill can lower a company's profitability, which is detrimental to its operation and development (Huo & Zhang, 2021). Goodwill impairment not only directly affects a company's current expenses and performance but also increases its uncertainty in terms of profitability (Z. Li, Shroff, Venkataraman, & Zhang, 2011), reduces its future cash flow (Bostwick, Krieger, & Lambert, 2016), undermines its actual business results, affects the development of the real economy (Hu & Li, 2019), and excessively high impairment can seriously damage a company's value and reputation (Fu, Lin, & Officer, 2013). According to the "information transmission theory," once a company's goodwill assets are impaired, it can also have an impact on market investors. The higher the impairment amount, the stronger the impact will be (Z. Li et al., 2011). Investors may make decisions that are unfavorable to the company, and the company's stock price may experience a cliff-like drop (Kim, Li, & Zhang, 2011), leading to a negative reaction from market investors about the company's future prospects (Knauer & Wöhrmann, 2016), which can bring systemic risks to the capital market and have a fatal impact on a company's sustainable development. Of course, some researchers have found that there is a significant negative correlation between goodwill impairment and a

company's short-term performance and a significant positive correlation with its long-term performance, which is a U-shaped correlation (C. Wang & Chu, 2020), and not a completely linear relationship (X. Wang, 2015). This paper believes that the negative impact of goodwill impairment on a company's current performance is significant and thus proposes the following hypothesis:

H1: Other things being equal, impairment of goodwill can cause a decline in a company's performance in the current year.

GOODWILL IMPAIRMENT MANAGEMENT CAPABILITY AND COMPANY PERFORMANCE

Goodwill Impairment Management Capability and Company Performance

"Agency theory" suggests that the unverifiable nature of goodwill impairment testing leads executives to use their discretion to act opportunistically (Deng, 2019). Therefore, it is possible that a listed company's goodwill explosion may be a result of external circumstances that make it difficult to deliver performance promises, or it may be the case of a company taking a "big bath" to ease the pressure on its financial statements (Giner & Pardo, 2015; J. Wang, Cha, & Hu, 2022). Discretionary goodwill impairment losses are used opportunistically rather than informatively. The authors find managers exploit their discretion to "clear the deck" and meet or beat analysts' forecasts (Gros & Koch, 2020). A few studies have examined management capability as an influencing factor in goodwill impairment based on the above perspective. However, few studies have examined whether management uses identity characteristics for the ex-post treatment of goodwill impairment, and this study seeks to enrich the relevant research from this perspective. As the pivotal point of business management activities, management is the maker and executor of corporate strategy and has an important responsibility and obligation to prevent and control risks effectively. At the same time, management is the main body that implements internal controls, and high-quality internal controls can effectively mitigate the negative market reactions caused by goodwill impairment (Xinmin Zhang, Qing, & Yang, 2020). According to the risk-taking theory, management prefers to be risk-averse (Y. Li, 2022) and has an excellent track record of risk

prevention and cost control (Demerjian et al., 2013). "Reputation theory" also suggests that management will combine their reputation with their career, and the higher their ability, the more concerned they are about their reputation (He, Liu, & Huang, 2016; Zhao & Li, 2020). Management will actively participate in dealing with goodwill impairment risk to enhance their social reputation, try to reduce the impact of the risk on the company's performance, and send positive signals to the outside world. In addition, based on the "surplus management theory," we have reasons to believe that management can make appropriate use of surplus smoothing to beautify the financial statements without losing the authenticity and reliability of the company's financial statements, to ensure that the profitability of the company is more stable and growing, and to increase investors' confidence in the company, thus contributing to the long-term development of the company. Of course, the competencies of different managers vary considerably, depending on their knowledge, skills, and experience (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Mason, 1984; Hitt, Bierman, Shimizu, & Kochhar, 2001). Research based on "Upper echelons theory" (Hambrick & Mason, 1984) and "information transfer theory" (Stronger management's capabilities to access, distinguish, and use the information to help identify goodwill impairment risks in a timely manner and reduce the proxy issues faced by companies in the event of goodwill impairment (Tian & Song, 2022). High levels of management are more cautious about risk and adopt more robust response strategies (Nuthall, 2009). Based on the above analysis, the following hypotheses were formulated:

H2: The occurrence of goodwill impairment will prompt management to adopt effective risk response strategies, thereby reducing the impact on the company's performance.

H3: Managers with high ability are able to reduce the impact of goodwill impairment on company performance to a greater extent than managers with low ability.

DATA AND EMPIRICAL

Data Sources

On January 1, 2007, ASBE (2006) came into effect, and goodwill was entered into the balance sheet as a separate asset. Therefore, this study used the 2007--2021 Chinese A-share listed

companies as the research sample. At the same time, the data were screened according to the following procedures: (1) ST and *ST companies were excluded. (2) Listed companies that are classified as financial companies according to the industry classification guidelines of the SFC's Industry Classification Guidelines for Listed Companies (revised in 2012). (3) A sample of companies with both an ending balance of goodwill and an impairment loss of goodwill of zero were excluded, as such companies have no goodwill and do not require goodwill impairment. (4) Samples with missing data were excluded. Data were obtained from the CSMAR and Wind databases. Simultaneously, to eradicate the possible impact of heteroscedasticity, logarithmic processing is adopted for the Size of assets (Size).

Variable Measurements

$$\text{Max}\theta_t = \text{Income} \times (V_1 \text{COGS}_t + V_2 \text{S\&M}_t + V_3 \text{FASS}_t + V_4 \text{Intang}_t + V_5 \text{RD}_t + V_6 \text{GW}_t)^{-1} \quad (1)$$

Among them, income is operating income, representing only the output of the company; COGS, S&M, FASS, Intang, RD, and GW represent operating costs, selling and administrative expenses, fixed assets, intangible assets, R&D expenditure, and goodwill, respectively, all representing the company's inputs, and the subscript t represents the corresponding value of the listed company for the year.

$$\theta_{i,t} = \beta_0 + \beta_1 \text{Size}_{i,t} + \beta_2 \text{Market}_{i,t} + \beta_3 \text{CF}_{i,t} + \beta_4 \text{Age}_{i,t} + \beta_5 \text{DIVERS}_{i,t} + \beta_6 \text{Inter}_{i,t} + \sum \text{Year} + \varepsilon_{i,t} \quad (2)$$

Second, Tobit regressions of firm efficiency values (θ) are conducted on the firm's efficiency values by industry. As the efficiency value of the firm is influenced by both management capability and the inherent factors of the firm itself, the residuals (ε) obtained by separating out the form factor based on model (1) are the effect of management on the efficiency value of the firm, that is, management capability, as shown in model (2). Size, Market, CF, Age, DIVERS, and Inter represent the natural logarithm of a firm's total assets, market share, free cash flow, year of establishment, degree of diversification, and degree of internationalization, respectively. The

(1) Dependent variable: firm performance. Drawing on existing studies (Cavero Rubio, Amoros Martinez, & Collazo Mazon, 2021; Han, Tang, & Tang, 2021), the dependent variable in this paper is the total net asset margin (ROA).

(2) Independent variable: goodwill impairment (GIV), measured using the ratio of goodwill incurred to assets at the end of the period, with reference to existing studies (Han et al., 2019).

(3) Mediating variable: MA.

Reference to classical algorithms of related scholars (Demerjian et al., 2013). This study uses a two-stage DEA-Tobit approach to measure management capability, the core of which is to explore the efficiency with which managers can convert the resources invested by the company into sales revenue. In the first stage, company productivity is calculated using Data Envelopment Analysis DEA with the following Model:

Since a firm's efficiency is influenced not only by management capabilities but also by firm-level characteristics, in the second stage, a Tobit regression is run on the firm's productivity to remove the effect of firm characteristics with the following Model:

Tobit model cannot cover all firm-level characteristics that affect a firm's operational efficiency, resulting in noise interference in the regression residuals representing managers' capabilities (Dai, Peng, & Liu, 2016). For the heterogeneity analysis, the regression residuals are sorted into four groups from smallest to largest, and managerial competencies (MA) are assigned as 1, 2, 3, and 4, with higher values representing stronger managerial competencies (Xianzhi Zhang & Du, 2020). The assigned management capacity was MA_{vir}.

(4) Control variables: This study draws on the existing research literature to select the control

variables as follows: The variables of capital structure, growth and corporate governance are: Size of assets (Size), gearing (Debt), asset growth (AG), revenue growth (RG), net cash flow from operations to total assets (CFO), the shareholding of the top 10 shareholders (TOP10), loss status (Loss) and profit decline (Slip) at the end of the period. In addition, this study controlled for industry and year.

The descriptive statistics of the relevant variables that the minimum value of ROA is -0.212, with a maximum value of 0.526, a mean value of 0.00191, and a standard deviation of 0.129, which is greater than 0.05, with a large difference in ROA across companies and a wide distribution of values. With a maximum value of 1.405, a minimum value of -0.282, a mean value

of 0.0325, and a standard deviation of 0.0938, the goodwill impairment indicator varied significantly from company to company. The standard deviation of MA for management capability is 0.157, indicating a large difference in management capability across the sample companies, with a mean value of -0.0527 for management capability, which is relatively similar to the values of other studies on management capability in China (Dai et al., 2016). In addition, both the sample control variables and grouping variables lead to the conclusion that there are significant differences in the specific circumstances of each company and that the sample has research value. The descriptive statistics for the selected variables are shown in Table 1.

Table 1. Descriptive statistics

Variables		Sample Size	Mean	Standard Deviation	Min	Max
Dependent variable	ROA	3,870	0.00191	0.129	-2.120	0.526
Explanatory variable	GIV	3,870	0.0325	0.0938	-0.282	1.405
Mediating variable	MA	3,870	-0.0527	0.157	-0.553	0.518
Control variables	Size	3,870	9.849	0.596	8.267	12.40
	AG	3,870	0.0728	0.243	-0.896	3.062
	RG	3,870	0.113	0.446	-2.733	17.32
	Debt	3,870	0.465	0.198	0.0103	1.403
	TOP10	3,870	55.22	15.09	8.780	98.58
	CFO	3,870	0.0461	0.0669	-0.372	0.516
	Loss	3,870	0.205	0.403	0	1
	Slip	3,870	0.483	0.500	0	1
Grouping Variable	MAvir	3,870	2.159	1.093	1	4

MODEL SPECIFICATION

According to the purpose of this study, we constructed a baseline regression (1) to test the

impact of goodwill impairment on firm performance.

$$ROA = \alpha_0 + \alpha_1 GIV + \alpha_2 Size + \alpha_3 AG + \alpha_4 RG + \alpha_5 Debt + \alpha_6 TOP10 + \alpha_7 CFO + \alpha_8 Loss + \alpha_9 Slip + \alpha_{10} \sum Industry + \alpha_{11} \sum Year + \varepsilon \quad (3)$$

This study explores the mediating effect of goodwill impairment on firm performance and management capability. Mediating effect models (4) and (5) were constructed by combining (3), where α_1 is the total effect of goodwill impairment on ROA, θ_1 is the direct effect of

goodwill impairment on ROA, and $\beta_1 \times \theta_2$ is the mediating effect. In the case where α_1, β_1 , and θ_2 are significant, if θ_1 is significant, there is a partial mediation effect; if θ_1 is not significant, there is a full mediation effect.

$$MA = \beta_0 + \beta_1 GIV + \beta_2 Size + \beta_3 AG + \beta_4 RG + \beta_5 Debt + \beta_6 TOP10 + \beta_7 CFO + \beta_8 Loss + \beta_9 Slip + \beta_{10} \sum Industry + \beta_{11} \sum Year + \varepsilon \quad (4)$$

$$ROA = \theta_0 + \theta_1 GIV + \theta_2 MA + \theta_3 Size + \theta_4 AG + \theta_5 RG + \theta_6 Debt + \theta_7 TOP10 + \theta_8 CFO + \theta_9 Loss + \theta_{10} Slip + \theta_{11} \sum Industry + \theta_{12} \sum Year + \varepsilon \quad (5)$$

At the same time, to examine the extent to which the level of management Ability affects firm performance when goodwill is impaired, management is divided into four test groups according to the level of ability, and the impact of goodwill impairment on firm performance is examined in groups, which could be specifically

seen in equation (6). Management ability was used as a moderating variable for interaction and grouping tests. In equation (7), if the interaction term coefficient λ_3 is significant, it indicates that management capability significantly moderates the impact of goodwill impairment on firm performance.

$$ROA = v_0 + v_1 GIV + v_2 Size + v_3 AG + v_4 RG + v_5 Debt + v_6 TOP10 + v_7 CFO + v_8 Loss + v_9 Slip + v_{10} \sum Industry + v_{11} \sum Year + v_{12} MAvir_{1,2,3,4} + \varepsilon \quad (6)$$

$$ROA = \lambda_0 + \lambda_1 GIV + \lambda_2 MA + \lambda_3 MAvir * GIV + \lambda_4 Size + \lambda_5 AG + \lambda_6 RG + \lambda_7 Debt + \lambda_8 TOP10 + \lambda_9 CFO + \lambda_{10} Loss + \lambda_{11} Slip + \lambda_{12} \sum Industry + \lambda_{13} \sum Year + \varepsilon \quad (7)$$

Relevance Analysis

Before conducting regression analysis, this study conducted a correlation analysis on all variables in Table 2. It was found that the relationship between goodwill impairment (GIV) and firm performance (ROA) was significant at

the 1% level, with a correlation coefficient of -0.639. This laid the foundation for the regression analysis. The correlation between the other variables was also significant at the 1% level, with small coefficients indicating no multicollinearity. Thus, the next step of the analysis can be carried out.

Table2 Correlation tests

	ROA	GIV	Size	AG	RG	Debt	TOP10	CFO	Loss	Slip
ROA	1									
GIV	-0.639***	1								
Size	0.163***	-0.184***	1							
AG	0.452***	-0.238***	0.098***	1						
RG	0.208***	-0.046***	0.0180	0.292***	1					
Debt	-0.198***	-0.065***	0.474***	-0.064***	-0.047***	1				
TOP10	0.160***	-0.068***	0.269***	0.166***	0.095***	0.0210	1			
CFO	0.266***	-0.097***	0.061***	0.00700	0.058***	-0.166***	0.114***	1		
Loss	-0.655***	0.371***	-0.179***	-0.372***	-0.187***	0.158***	-0.191***	-0.203***	1	
Slip	-0.351***	0.168***	-0.126***	-0.258***	-0.240***	0.0210	-0.116***	-0.179***	0.415***	1

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

EMPIRICAL RESULTS AND ANALYSIS

Baseline Analysis

To conduct the regression analysis of goodwill impairment on firm performance, a VIF test was performed. The VIF values for each variable were less than two, with a mean VIF value of 1.42, again indicating that the Model was free from multicollinearity. In Table 3, model (1) indicates that the estimated coefficient of goodwill

impairment and firm performance ROA is -0.912, which is significant at the 1% level, and Model (2) indicates that the results are still significant after the addition of control variables. For every 1% increase in the overall level of goodwill impairment, the company's ROA decreases by 0.654%, indicating that goodwill impairment leads to a decrease in the company's performance in the current period. Prove that H1 is valid. As far as the control variables are

concerned, the Size of a company's assets, its asset growth rate, and revenue growth rate significantly affect its ROA, indicating that a

larger asset base, better asset growth, and higher revenue growth lead to greater ROA value for the company.

Table 3: Regression results of goodwill impairment on firm performance

VARIABLES	(1)		(2)	
	ROA		ROA	
	Factor	T-ststs	Factor	T-ststs
GIV	-0.912***	(-52.93)	-0.654***	(-46.65)
Size			0.019***	(7.56)
AG			0.085***	(15.59)
RG			0.012***	(4.28)
Debt			-0.124***	(-16.30)
TOP10			0.000	(0.27)
CFO			0.226***	(12.14)
Loss			-0.099***	(-27.11)
Slip			-0.012***	(-4.43)
Constant	0.189***	(7.93)	0.020	0.72
Observations	3870		3870	
R-squared	0.462		0.702	
Industry FE	YES		YES	
YEAR FE	YES		YES	

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively

The company's asset-liability ratio (Debt), year-end profit loss (Loss), and profit decline (Slip) have a significant negative impact on the company's performance (ROA). This indicates that the more debt a company has, the more detrimental the impact of profit loss and decline on the company's performance.

Robustness and Endogeneity Test

To guarantee the persuasiveness and reliability of the empirical outcomes, this study uses "Replacement variables" to test the robustness in Table 4. (1) Replace the independent variable

goodwill impairment GIV with AGI; AGI = goodwill impairment amount/net goodwill value at the beginning of the period. (2) The dependent variable ROA is replaced with ROE, the firm's return on net assets. (3) Replacing both independent and dependent variables. We find that the correlation coefficient of AGI to ROA is -0.060, the correlation coefficient of GIV to ROE is -1.520, and the correlation coefficient of AGI to ROE is -0.193; all correlation coefficients are significant at the 1% level. This indicates that goodwill impairment significantly negatively impacts company performance for the year, illustrating the results' robustness.

Table 4: Robustness Test results

VARIABLES	(1)		(2)		(3)	
	ROA		ROE		ROE	
	Factor	T-ststs	Factor	T-ststs	Factor	T-ststs
GIV			-1.520***	(-9.05)		
AGI	-0.060***	(-11.56)			-0.193***	(-3.80)
Controls	YES		YES		YES	
Observations	3,870		3,870		3,870	
R-squared	0.549		0.143		0.128	
Industry FE	YES		YES		YES	
YEAR FE	YES		YES		YES	

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels

The Industry and YEAR were fixed when performing regression validation to prevent endogeneity problems with the Model. Since it is also possible that poorer performing companies are at greater risk of goodwill impairment due to their poor operations, thus creating reverse causality, to solve this problem, the industry-average goodwill impairment level (GIV_IV) is used as the instrumental variable, referring to the choice of instrumental variables by relevant scholars (Liu, Xu, & Yang, 2021). Using the 2sls method, the score can obtain a correlation coefficient between GIV_IV and ROA of -0.735 and is significant at the 1% level, consistent with the baseline regression.

Mediation Effect Analysis

A 3-step test was conducted to verify whether management competencies can influence

company performance ROA through mediating effects. In Table 5, step (1) detects a coefficient of -0.654 for the independent variable goodwill impairment on firm performance ROA, which is significant at the 1% level, which is the total effect of goodwill impairment on firm performance. Model (2) tests the effect of goodwill impairment GIV on the mediating variable MA with a regression coefficient of 0.144, which is significant at the 1% level. Model (3) tests the mediating effect of MA as a mediating variable, where -0.664 is the direct effect, significant at the 1% level, and 0.144×0.070 is the mediating effect; 0.144 and 0.070 are also significant at the 1% level, indicating that management capability plays a role in mediating the effect of goodwill impairment on firm performance. The same conclusion can be obtained by performing the Sobel test, with a mediating effect weight of 0.017. This result proves that H2 is valid.

Table 5: Test of Management Ability as a mediating effect

VARIABLES	(1)		(2)		(3)	
	ROA		MA		ROA	
	Factor	T-ststs	Factor	T-ststs	Factor	T-ststs
MA					0.070***	(8.26)
GIV	-0.654***	(-46.65)	0.144***	(5.41)	-0.664***	(-47.60)
Controls	YES		YES		YES	
Constant	0.020	(0.72)	0.743***	(14.05)	-0.032	(-1.13)
Observations	3,870		3,870		3,870	
R-squared	0.702		0.284		0.708	
Industry FE	YES		YES		YES	
YEAR FE	YES		YES		YES	

Note: *** indicates significance at the 1% level.

Heterogeneity Analysis

Heterogeneity analysis was conducted to test the role of management competencies on company performance in the case of goodwill impairment to verify whether management competencies had a positive effect and whether different management competencies had the same effect. In Table 6 model (1), MA is used as a moderating variable in the Model of goodwill impairment and firm performance, the cross-product term GIV*MA of goodwill impairment and management ability is introduced, and the coefficient of GIV and ROA is -0.685, which is significant at the 1% level. The coefficient between GIV*MA and ROA is 0.471, again significant at the 1% level. This indicates that

management ability weakens the impact of goodwill impairment on firm performance and that management ability exerts a positive dampening effect on the relationship between goodwill impairment and firm performance. Models (2), (3), (4), and (5) are grouped regressions according to the level of management Ability, with 1, 2, 3, and 4 corresponding to the lowest to highest levels of management Ability, respectively. Of the 3870 sample companies observed, the sample size of companies with low to high management capability ranged from high to low, with 1428, 1023, 794, and 625, respectively, indicating that the number of companies with low management capability was greater than the number of

companies with high management capability. Observing the results of Table 6 grouped regressions, the coefficients of correlation between GIV and ROA in models (2), (3), (4), and (5) are all negative and significant at the 1% level. It is well demonstrated that goodwill impairment is significantly negatively related to firm performance irrespective of management

capacity. Regression system for subgroups: $-0.864 < -0.726 < -0.634 < -0.538$, the impact of goodwill impairment on company performance diminishes in that order. This shows that companies with high management capacity have higher risk control and are more conducive to reducing the impact of goodwill impairment on the company's ROA. Prove that H3 is valid.

Table 6: Regression results of management Ability heterogeneity on firm performance

VARIABLES	(1)	(2)	(3)	(4)	(5)
	ROA Full samples	ROA MAvir=1	ROA MAvir=2	ROA MAvir=3	ROA MAvir=4
GIV	-0.685*** (-48.58)	-0.864*** (-29.60)	-0.726*** (-30.64)	-0.634*** (-21.70)	-0.538*** (-17.13)
MA	0.050*** (5.64)				
GIV*MA	0.471*** (7.82)				
Controls	YES	YES	YES	YES	YES
Constant	-0.018 (-0.65)	-0.128* (-1.87)	0.063 (1.35)	-0.078 (-1.36)	0.080 (0.92)
Observations	3,870	1,428	1,023	794	625
R-squared	0.712	0.711	0.778	0.766	0.714
Industry FE	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES

Note: ** and *** indicate significance at the 5% and 1% levels, respectively, whereas brackets represent the t values.

RESEARCH CONCLUSIONS AND RECOMMENDATIONS

The research findings of this study indicate a significant negative correlation between goodwill impairment and the company's performance in the current year. The managerial ability has positively mediated and moderated the effect between goodwill impairment and the company's performance. Goodwill impairment will significantly affect managerial ability, and the significant play of managerial ability will weaken the impact of goodwill impairment on the company's performance. In the relationship between goodwill impairment and the company's performance, managerial ability has played a positive inhibitory effect. Compared with low-ability management, high-ability management has a greater inhibitory effect.

This study's significance lies in improving the research model on the impact of goodwill impairment on company performance by incorporating managerial discretion as a

moderating and mediating variable. The study shows that managerial ability positively moderates the relationship between goodwill impairment and company performance. Its moderating effect significantly mitigates the negative impact of goodwill impairment on company performance. In addition, the study finds that managerial ability has a positive inhibitory effect on the relationship between goodwill impairment and company performance, and this effect is more pronounced when managerial ability is high compared to low.

Based on the research findings, it is recommended that corporate governance should focus on the management's ability to cope with goodwill impairment. Regardless of whether the company has controlled the factors that affect goodwill impairment beforehand, once it occurs, the company should fully use management's ability to control the risk of goodwill impairment. The company must pay attention to and improve the input-output efficiency of management, reduce the impact of goodwill

impairment on the company, and maintain the stability of the company. At the same time, it is important to pay attention to the cultivation of management's ability and learn from the experience of developed countries. Relevant departments should establish a professional qualification certification system for business management personnel that aligns with international standards and comprehensively enhance the management's ability through the certification system.

Indeed, this article has its limitations. One of them is that the measurement of managerial ability currently relies on research methods from authoritative scholars, but numerous factors affect managerial ability, and the current methods still have flaws. It is hoped that future research can improve on this issue. Additionally, further research is needed to investigate the duration of the impact of managerial ability. Lastly, enhancing managerial ability is also a direction for future research.

DATA AND EMPIRICAL

Data Sources

On January 1, 2007, ASBE (2006) came into effect, and goodwill was entered into the balance sheet as a separate asset. Therefore, this study used the 2007--2021 Chinese A-share listed companies as the research sample. At the same time, the data were screened according to the following procedures: (1) ST and *ST companies were excluded. (2) Listed companies that are classified as financial companies according to the industry classification guidelines of the SFC's Industry Classification Guidelines for Listed Companies (revised in 2012). (3) A sample of companies with both an ending balance of goodwill and an impairment loss of goodwill of zero were excluded, as such companies have no goodwill and do not require goodwill impairment. (4) Samples with missing data were excluded. Data were obtained from the CSMAR and Wind databases. Simultaneously, to eradicate the possible impact of heteroscedasticity, logarithmic processing is adopted for the Size of assets (Size).

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