

Bank-enterprise association industry-finance integration and excess goodwill-- Moderating effect of market competition and analysts' attention

Jibo Zhang*

Nanjing Normal University, Nanjing, Jiangsu, China

2603692667@qq.com

**corresponding author*

Keywords: Bank-Enterprise Integration of Industry and Finance; Excess Goodwill; Market Competition; Analyst Attention; Agency Issues

Abstract: Mergers and acquisitions help enterprises develop with high quality. Existing research holds a positive attitude on whether the integration of industry and finance can help enterprises to rationally acquire and inhibit excess goodwill, but ignores the possible negative impact. Based on the data of A-share listed companies from 2007 to 2021, this paper empirically tests the relationship between bank-enterprise integration of industry and finance and excess goodwill. The results show that there is a U-shaped relationship between bank-enterprise integration of industry and finance and excess goodwill. Market competition strengthens the U-shaped relationship between bank-enterprise integration of industry and finance and excess goodwill. Analysts' attention weakens the U-shaped relationship between bank-enterprise integration of industry and finance and excess goodwill. Based on information asymmetry and principal-agent theory, this paper explains the non-linear relationship between bank-enterprise IFI and excess goodwill, as well as the moderating effect of market competition and analyst attention. Further research finds that the impact of firm size, ownership nature and corporate governance on bank-enterprise integration of industry and finance and excess goodwill is heterogeneous, which helps to deeply understand the positive and negative effects of the integration of industry and finance, and provides decision-making reference for financial capital to better serve the real economy and help enterprises develop with high quality.

1. Introduction

The report to the 20th National Congress of the Communist Party of China (CPC) clearly proposes to "accelerate the construction of a new development pattern and focus on promoting high-quality development", and regards high-quality development as the primary task of

comprehensively building a modern socialist country. Mergers and acquisitions are the "boosters" for the development and growth of enterprises, as well as the "fast track" for accelerating the adjustment of national economic structure and deepening the supply-side structural reform. This is conducive to the high-quality development of enterprises and deepening the supply-side structural reform. M&a will generate M&A goodwill, which has become one of the most important assets on the balance sheet and the most valuable intangible asset due to the booming market economy (Qing and Zhang, 2023). Reasonable M&A goodwill comes from the synergy effect of the merger and acquisition and the excess return generated by the merger and acquisition. However, if the M&A goodwill exceeds the reasonable level, the excess goodwill will be generated. Excess goodwill can not bring synergy effect and excess return to the enterprise, but large-scale goodwill impairment will have a negative impact. For example, excess goodwill reduces the quality of corporate innovation (Tan et al., 2023), exacerbates the risk of corporate debt default (Zhang, 2022), leads to stock price crash (Deng and Mei, 2019), and reduces corporate operating performance (Wei and Zhu, 2019), which is not conducive to high-quality development of enterprises. At present, research on the influencing factors of excess goodwill is one of the key issues in the theoretical and practical fields.

Under the background of the integration of industry and finance, the role of financial capital as the main channel of corporate mergers and acquisitions has been further played, and the "two-way rush" between industrial capital and financial capital has been promoted. Guided by industrial transformation and upgrading, the integration of industry and finance is a link between the financial industry and the real industry, helping finance to serve the real economy with higher quality. The integration of industry and finance can leverage private capital to invest in strategic emerging industries, give full play to the functions of financial integration, value discovery and risk management, and contribute to high-quality economic development in China. However, the original intention and result of the integration of industry and finance are not completely consistent, and the integration of industry and finance itself is a "double-edged sword". So far, the academic research on the integration of industry and finance is not in-depth, and the conclusions are different. Some scholars believe that the integration of industry and finance will have a negative impact on enterprises. Li and Ma (2014) pointed out that the integration of industry and finance does not necessarily lead to rational allocation of resources, but may also lead to over-investment. Fan et al. (2024) found that the integration of industry and finance would lead firms to increase financial investment and induce capital arbitrage, thus inhibiting firms' ambidexterity innovation. Other scholars hold the opposite view. Lu et al. (2012) found that enterprises with shareholding in banks are less likely to be discriminated against by credit, which helps to relieve corporate financing constraints. Wang Yiqiu and Xie Meng (2023) pointed out that the integration of industry and finance can accelerate the transformation and upgrading of industrial structure by optimizing the allocation of resources among enterprises and promoting technological innovation. Liu Shuyan (2021) found that the integration of industry and finance can reduce M&A goodwill, and financing constraints play a part of the mediating effect.

To sum up, there are few studies on the integration of industry and finance and excess goodwill. Considering that there are qualitative and quantitative measurement methods for the integration of industry and finance, a few studies on the integration of industry and finance and excess goodwill (Liu and Guo, 2021) focus on whether enterprises conduct the integration of industry and finance as the research object, and do not consider the impact of different levels of integration of industry and finance on excess goodwill from a quantitative perspective. Therefore, this paper attempts to study whether different levels of integration of industry and finance will have different effects on excess goodwill of enterprises, and enrich the literature on integration of industry and finance and excess goodwill. In view of the important position of banks in China's financial system, the combination of

industrial capital and bank capital has become the most important way of the integration of industry and finance. And the moderating effect of market competition and analysts' attention. The results show that there is a U-shaped relationship between bank-enterprise integration of industry and finance and excess goodwill. Market competition can enhance the U-shaped relationship, while analyst attention can weaken the U-shaped relationship. The robustness test and endogeneity test further confirm the above conclusions. The extended research finds that compared with the large enterprises, the integration of industry and finance helps to restrain the excess goodwill of small and medium-sized enterprises. The impact of the integration of industry and finance in state-owned enterprises on excess goodwill is more significant than that in non-state-owned enterprises, mainly because state-owned enterprises are faced with more government intervention and greater soft budget constraints. The principal agent problem is the main reason for the U-shaped relationship between the integration of industry and finance and excess goodwill in non-state-owned enterprises. Strengthening corporate governance helps to alleviate the agency problem and weaken the promotion effect of high integration of industry and finance on excess goodwill.

Compared with the previous literature, the main marginal contributions of this paper are as follows: first, through empirical research, this paper finds that there is a U-shaped relationship between the integration of industry and finance and excess goodwill, which enriches the relevant research on the relationship between the integration of industry and finance and excess goodwill, and makes up for the shortcomings of the existing relevant research. Second, this paper further focuses on the moderating effect of market competition and analysts' attention on the relationship between the integration of industry and finance and excess goodwill, and reveals the impact of external environment changes on the relationship between the integration of industry and finance and excess goodwill. In order to help enterprises achieve high-quality development, this paper has certain practical significance. Thirdly, it enriches the application of principal-agent theory in the research on excess goodwill. This paper analyzes the internal mechanism of the integration of industry and finance in non-state-owned enterprises on excess goodwill, and reveals the main reasons for the U-shaped relationship between the integration of industry and finance and excess goodwill. Finally, this paper incorporates enterprise characteristics such as enterprise size, ownership nature, management shareholding ratio, equity balance degree into the research framework of the relationship between the integration of industry and finance and excess goodwill, and comprehensively considers the heterogeneous effects brought by the above factors. This makes the analysis of this paper more consistent with the realistic logic, thus effectively enhancing the practical guidance value of the research.

2. Literature review and research hypotheses

2.1. Review of literature on the integration of industry and finance and excess goodwill

The influencing factors and economic consequences of the integration of industry and finance. The integration of industry and finance refers to the relationship between real enterprises and financial institutions through mutual penetration of equity and personnel and mutual entry into each other's business fields. According to the direction of equity and personnel flow, the integration of industry and finance usually includes two types: from finance to industry and from industry to finance. In China, due to various considerations, the government departments have more restrictions on the penetration of financial capital into the industry, while the penetration of industrial capital into the financial industry is less restricted. Therefore, the second type of integration of industry and finance has been rapidly developed. This paper mainly studies the mode of "from industry to finance", so this paper only reviews the research on the second type of integration of industry and finance. At present, the academia has carried out a lot of research on the integration of industry and

finance by qualitative and quantitative methods, and achieved rich research results. The research content mainly includes the motivations and economic consequences of the integration of industry and finance.

The motivations of the integration of industry and finance mainly include the following: according to the transaction cost theory of Coase(1937), the market and the enterprise are two alternative resource allocation mechanisms, and the enterprise can internalize the external transaction cost through the link of property rights, reduce the transaction cost and improve the profit. Industrial capital and financial capital belong to different industries, and their businesses are complementary, so the integration of industry and finance can obtain management synergy effect (Lin Yuan, 2010). When enterprises develop to a certain scale, the richness of industrial capital makes them tend to diversify and expand further. The combination of industry and finance can optimize the allocation of resources, reduce the risk of enterprises and help enterprises to diversify (Teece, 1981). Li and Li (2017), based on the nature of property rights, believed that the integration of industry and finance of state-owned enterprises was more the result of government intervention, while the integration of industry and finance of non-state-owned enterprises was the main motivation to relieve financing constraints under the pressure of market competition, and only non-state-owned enterprises with higher degree of financing constraints would participate in financial institutions.

The research topics of the economic consequences of the integration of industry and finance can be roughly divided into three aspects: financing constraints, investment efficiency and corporate performance. Li and Ma (2014), Wan et al. (2015) found that real enterprises' equity participation in financial institutions alleviates corporate financing constraints, reduces corporate underinvestment, but intensifies corporate overinvestment, and also confirms the capital supply effect of the integration of industry and finance. The integration of industry and finance makes the financial financing cost of enterprises lower than the implicit financing cost of commercial credit, so that enterprises reduce the use of commercial credit, reduce the cost of debt, and improve the profitability of enterprises (Zhang et al., 2021). The integration of industry and finance enhances the sensitivity of enterprises to investment opportunities, thus promoting the improvement of capital allocation efficiency and total factor productivity of enterprises (Du and Jin, 2021). Tian et al. (2022) argued that the integration of industry and finance in non-state-owned enterprises can alleviate the financing constraints of innovation and form "resource synergy effect" to promote enterprise innovation. In state-owned enterprises, the integration of industry and finance can further soften the budget constraint, aggravate the agency problem, and form the "resource curse effect" to inhibit enterprise innovation. Li Haitong et al. (2023) found that the integration of industry and finance improves the investment efficiency of enterprises. For enterprises with underinvestment, the integration of industry and finance increases the scale of external financing of enterprises, thus alleviating the underinvestment; For enterprises with overinvestment, the integration of industry and finance inhibits the external financing of enterprises, thus reducing overinvestment.

Influencing factors of excess goodwill. According to China Accounting Standards for Business Enterprises No. 20 - Business Combination, goodwill is the difference between the merger cost of the purchaser and the fair value of the identifiable net assets of the purchaser. Excess goodwill is regarded as an irrational and excessive part of goodwill, which is difficult to play a synergistic role and is an asset that cannot enable enterprises to obtain expected excess profits (He and Ren, 2021). Research on the antecedents of excess goodwill is mainly carried out from three aspects: M&A transaction characteristics, management behavior and external environment. M&a transactions are the only source of goodwill, so the characteristics of M&A also have a direct impact on goodwill. Hostile merger and acquisition will produce excess goodwill that is difficult to play a synergistic role, which lays the groundwork for goodwill impairment (Gu et al., 2011). As the main participants

of M&A activities, the motivation and behavior of corporate managers also have a direct impact on goodwill. Managers' overconfidence will lead to the formation of excess goodwill (Li et al., 2018). The principal-agent theory holds that the inconsistent interests of managers and shareholders may lead to the collusion of managers and the acquirer to realize interest transmission by paying high M&A premium, resulting in excess goodwill (Shi et al., 2017); In order to satisfy their own self-interest of building "business empire", managers increase the frequency of M&A, expand the scale of M&A, and acquire at a premium, resulting in excess goodwill (Mueller and Sirower, 2003). The external environment also has a certain impact on the formation of excess goodwill. Hu and Li (2019) found that when the stock market is good, enterprises are prone to over-investment, resulting in a plummeting overall investment efficiency, and it is difficult to play the expected synergistic effect after mergers and acquisitions, forming goodwill bubbles. Other scholars have found that corporate social responsibility (Xu, 2020) and effective internal control (Zhang et al., 2018) are helpful to restrain the formation of excess goodwill.

2.2. Impact of the integration of industry and finance on excess goodwill

With the rapid development of China's economy, M&A activities in the capital market have become more active, and the scale of goodwill recognized by listed companies has also been expanding. Premium M&A is mainly because enterprises believe that M&A can play a synergistic role and bring excess returns, and they are willing to pay a certain premium as transaction costs (Varaiya, 1987). Among them, the excess return of M&A includes the discount return caused by the undervaluation of the acquired enterprise and the synergistic return caused by the synergy effect of the acquirer and acquirer. The larger the expected excess return of M&A is, the higher the M&A premium firms are willing to pay. Then, managers are usually deeply involved in the whole process of M&A, not only directly participating in the formulation and implementation of M&A plans, but also playing a major decisive role in the whole process of M&A, including the selection and valuation of M&A targets. If managers do not correctly identify the value of the enterprise and misestimate the synergistic effect of the merger and acquisition, they will pay irrational premium in the merger and acquisition decision, which will lead to excess goodwill beyond the reasonable level. Specifically, the main reasons for the formation of excess goodwill are as follows: First, there are large uncertainties in the recognition and measurement of goodwill, which are mainly reflected in the greater manipulability of the measurement of the fair value of the assets identifiable by the purchaser and the information asymmetry between the acquirer and the acquirer, which provides space for the agency problem of the management and easily leads to its opportunistic behavior (Shi et al., 2017). Therefore, the fair value of the acquiree is overestimated, the risk is underestimated, and the acquiree is willing to pay excess acquisition premium, resulting in excess goodwill. Secondly, the management may blindly expand for private gain, thus overestimating the expected returns generated by the synergistic effect of enterprise merger, which leads to the payment of excess premium and the formation of excess goodwill (Slusky and Caves, 1991). The governance effect of the integration of industry and finance inhibits the formation of excess goodwill by reducing information asymmetry, strengthening corporate supervision, promoting efficient merger and acquisition of enterprises. On the one hand, after becoming an interested party, enterprises can disclose more information about M&A projects to banks without worrying about the leakage of trade secrets, and they can also obtain more "soft information" from banks that cannot be obtained from public channels (Wan et al., 2015). All of these can help managers make reasonable judgments on the selection and valuation of M&A targets, reduce information asymmetry in the process of M&A, and restrain the formation of excess goodwill. On the other hand, banks, as "big lenders", are more capable and motivated to effectively supervise enterprises, thus reducing the moral hazard of the management and curbing the excessive investment

of the management (Rajan, 1992; Diamond, 1984). The integration of industry and finance helps to alleviate the information asymmetry between enterprises and banks, enabling the latter to have a deeper and more comprehensive understanding of enterprises' production and operation status, capital flow and utilization efficiency, and helping them to judge and timely supervise the risk and profitability of projects (Zhang et al., 2021). Giving full play to the supervision advantages of banks can reduce ineffective investment of enterprises (Wu et al., 2012), reduce the excessive acquisition premium paid by the management due to blind confidence or self-interest in the process of M&A, and inhibit the formation of excess goodwill.

However, with the continuous improvement of the integration of industry and finance, the resources at the disposal of the management will increase, the budget constraint of the enterprise will be softened, the governance effect will be weakened, the agency problem and the management's overconfidence will be worsened, and the excess goodwill will be promoted. Specifically, when the level of integration of industry and finance is high, enterprises can directly participate in the credit decision-making of financial institutions through channels such as shareholders' meeting or board meeting, creating more credit facilities and preferential conditions for enterprises (Yuan and Liang, 2023), but it also weakens the supervision role of financial institutions on enterprises (Li and Ma, Li and Ma, 2014), which aggravates the information asymmetry of enterprises. If banks cannot "perfectly" supervise the use of credit facilities, enterprises may use the acquired resources to over-invest (Norden and Weber, 2010). According to the principle-agent theory, a major feature of modern joint-stock companies is the separation of ownership and management rights. Shareholders hope to maximize the value of the enterprise by empowering the management. However, due to adverse selection and moral hazard, managers' goal is not necessarily to maximize the interests of shareholders, but to enhance their own interests and control rights by expanding the scale of the enterprise. This also means that the agency problem is common in enterprises, but the degree is different. When an enterprise has more disposable resources, on the one hand, it aggravates the motivation of management's opportunistic behavior, and on the other hand, it also provides financial support for its opportunistic behavior (Jensen, 1986), which worsens the agency problem. In this case, the company's management will not return cash to shareholders in the form of dividends, but tend to launch mergers and acquisitions, and such mergers and acquisitions have poor performance, and it is difficult to play a synergistic effect (Harford, 1999), and promote the formation of excess goodwill. According to the behavioral finance theory in the "rent free effect" and "overconfidence" hypothesis, when managers are optimistic about the current and future expectations, or more sensitive to positive information, its investment behavior more radical (XiaoJun, 2013, Shi Yongdong, etc., 2009). According to the theory, the profits obtained by the actor in the early stage have a buffer effect on the losses in the later stage, thus weakening the loss aversion of the actor and increasing his willingness to take greater risks. On the contrary, the actor's loss in the early stage will enhance his aversion to loss and risk (Thaler and Johnson, 1990). With the further deepening of the integration of industry and finance, we can reasonably infer that in a certain period of time in the future, as long as the enterprises keep the integration of industry and finance, the soft budget constraint, heterogeneous information and financing convenience brought by the integration of industry and finance will always exist. Therefore, managers will have a good expectation of the resources available in this period, and are more sensitive to good news. They do not need to worry about the lack of credit funds due to aggressive M&A, nor do they need to worry about missing M&A opportunities due to the lack of heterogeneous information, which increases the management's overconfidence and prompts managers to carry out aggressive M&A strategy, resulting in excess goodwill.

In conclusion, there is a U-shaped relationship between the integration of industry and finance and excess goodwill. When the level of integration of industry and finance is relatively low, improving the level of integration of industry and finance helps to improve corporate financing

constraints, reduce information asymmetry, give play to the supervision advantages of banks, and restrain the formation of excess goodwill. However, when the level of integration of industry and finance reaches a certain inflection point, further improving the level of integration of industry and finance will soften the budget constraint of enterprises, weaken the supervision and governance effect of enterprises and banks, and promote the formation of excess goodwill. Therefore, this paper puts forward the following hypothesis:

H1: there is a U-shaped relationship between the integration of industry and finance and excess goodwill. With the improvement of the integration of industry and finance, the formation of excess goodwill is inhibited; When the integration of industry and finance exceeds the inflection point level, it promotes the formation of excess goodwill.

2.3. The moderating effect of market competition and analysts' attention

Companies make M&A decisions in a specific environment, and product market competition is an important external environmental factor faced by companies (Zhang and Zhang, 2015), so the M&A behavior of companies may be a response to the external competitive environment. In the face of strong market competition, enterprises will improve the information quality by increasing the disclosure frequency and enriching the disclosure content (Burks et al., 2018), and reduce the information asymmetry inside and outside the enterprise, so as to help investors make correct evaluation and decision. At the same time, the fierce market competition will help ease the problem of agency (yan-feng zhao, etc., 2023), the specific inhibition of agency problem from the following two aspects: on the one hand, the product is competition in the market competition elimination mechanism. Companies in highly competitive industries are faced with the risk of loss of market share and investment opportunities. Once companies have poor performance or business failure, their competitiveness will also be reduced, and even face the fate of being eliminated from the market. Their managers will also face the impact of dismissal, salary reduction and reputation decline. Product market competition, on the other hand, reduced the cost of information asymmetry and external supervision, provides more opportunities for evaluating manager for outside investors, to strengthen the control of external market, manager market, such as governance constraints mechanism, thus, increasing the management the efficiency of investment risk and cost, improve the degree of its management efforts. Therefore, in the early stage of the integration of industry and finance, fierce market competition and bank supervision play a synergistic role to jointly reduce the information asymmetry of enterprises, inhibit the opportunistic behavior of managers, and further inhibit the formation of excess goodwill, that is, the U-shaped decline is enhanced.

Fierce market competition will encourage companies to find new profit growth points, take the lead in entering new industries or regions, and take the lead in investing in new projects, which will give companies a first-move advantage, conducive to the formation of industry standards, and even form entry barriers (Porter, 2008). Therefore, fierce market competition will promote enterprises' over-investment (Zhang, 2015). When the integration of industry and finance is high, banks will provide enterprises with credit financing facilities with weak supervision (Li and Ma, 2014), which will further soften the financing constraints and increase the disposable resources of enterprises, which will lead to blind merger and acquisition, diversified development and improvement of market competitiveness. Financial support is provided, which further intensifies the formation of excess goodwill, that is, the U-shaped increase rate is enhanced. Based on the above discussion, this paper proposes the following hypothesis:

H2: Intense market competition will enhance the U-shaped relationship between the integration of industry and finance and excess goodwill.

Analyst attention can release the overall industry development status and prospect signals, and is

the vane of corporate investment. No matter what the external environment is, the more positive analysis reports occupy the dominant position, because the private interests of analysts are subject to the interests of other market players, such as the release of unfavorable reports will face the pressure exerted by the affiliated securities companies, investment banks and other stakeholders (Fu and Jie, 2023). Positive analysis reports will increase the confidence of managers, who will be more actively involved in M&A decisions due to their good vision for the enterprise. At the same time, analyst attention helps enterprises to obtain resources and relieve financing constraints (Yu et al., 2017). Specifically, analyst attention reduces information asymmetry, and more and more investors can learn more information about the target enterprises, thus increasing investment in the enterprises, which alleviates the financing constraints of the enterprises to a certain extent (Feng et al., 2021). This will reduce the dependence of enterprises on bank credit resources and weaken the supervision of banks on M&A projects. In the early stage of the integration of industry and finance, analysts' attention may increase managers' overconfidence and weaken the governance effect of the integration of industry and finance, and weaken the inhibitory effect of the integration of industry and finance on excess goodwill, that is, the U-shaped decline rate slows down.

As an important financial intermediary, analysts can promote the formation of a transparent information environment between enterprises and investors, and alleviate the agency problem caused by the separation of ownership and control (Guo and Jian, 2021). With the deepening of the integration of industry and finance, the opportunistic behavior of the management is generated, and the analyst, as an external corporate governance mechanism, can weaken the agency problem, inhibit the opportunistic behavior of the executives (Dyck et al., 2010), and weaken the promotion effect of the integration of industry and finance on excess goodwill, that is, the U-shaped increase rate slows down. Based on this, this paper puts forward the following hypothesis:

H3: Analyst attention will weaken the U-shaped relationship between the integration of industry and finance and excess goodwill.

To sum up, this paper constructs the theoretical model as shown in the figure 1.

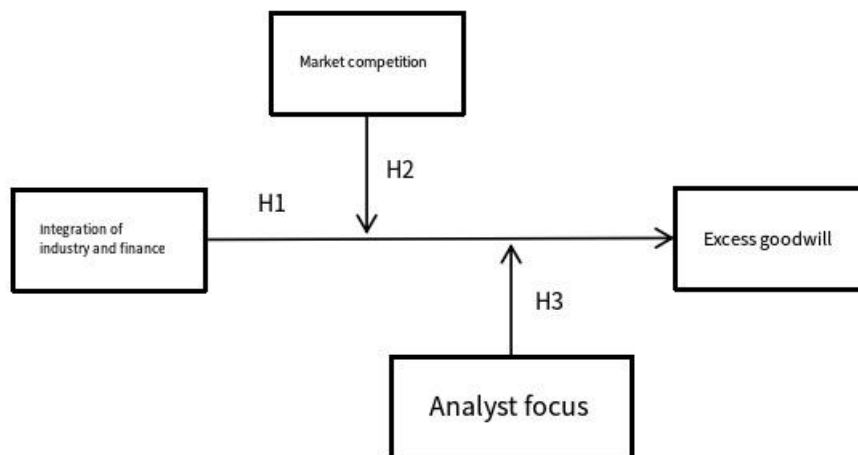


Figure 1. research design

2.4 Research design

2.4.1. Sample selection and data sources

The sample data of this paper are selected from the listed companies from 2007 to 2021. Considering the particularity of the financial industry and the reliability of the data, the ST, PT, delisted listed companies and the samples with serious missing data are excluded. After data sorting,

a total of 2659 samples of unbalanced panel data are obtained. In order to reduce the influence of outliers on the results, all continuous variables are winsorized by 1%. The financial data of listed companies are mainly from the CSMAR database. The data of listed companies' holdings of bank shares, basic information of enterprises and their own characteristics are mainly from Wind database. The industry classification is according to the industry classification standard of China Securities Regulatory Commission, and the statistical software is Stata 15.0.

2.4.2. Variable measurement

Dependent variable: In the existing literature, there are two main ways to measure the excess goodwill: one is to refer to Ramanna's definition of abnormal goodwill and use the goodwill adjusted by the median or mean of the industry year to measure the size of excess goodwill (Sun et al., 2021; Guo and Huang, 2020; Xu, 2020); The other is to use the expected return model of goodwill to measure excess goodwill (Wei and Zhu, 2019). This paper chooses to refer to Ramanna's method of measuring excess goodwill. The measurement of excess goodwill can not only eliminate the effect of company size on goodwill, but also take the median of the industry standardized goodwill as the benchmark to reflect the overestimation of the company's goodwill compared with other companies in the same industry (Ramanna, 2008), considering that the distribution of the company's standardized goodwill has a serious right-skewed trend.

Independent variable: the integration of industry and finance (Intergrate), existing studies have mainly measured the integration of industry and finance in two ways: one is to use the equity ratio of the enterprise holding the shareholding (holding) financial institution as the measurement of the variable of intergrate (Tan et al., 2016; Zhang and Sun, 2007); The other is measured by binary variables. If an enterprise holds shares in financial institutions, it is denoted as 1, otherwise it is denoted as 0 (Fan et al., 2024; Tian et al., 2022; Zhang et al., 2021). This paper focuses on the study of the bank-enterprise integration of industry and finance, and the dichotomous variables cannot further describe the dynamic relationship between the integration of industry and finance and excess goodwill.

The higher the proportion of shareholding banks, the deeper the integration of industry and finance.

Market competition (HHI_A), referring to Haveman et al. (2017) and Lian et al. (2019), this paper adopts the Herfindahl-Hirschman index (HHI) of each industry in the current year to measure the degree of industry competition. Firstly, each industry segment of the listed companies is classified according to the industry code (2012 edition) of China Securities Regulatory Commission (CSRC) (2 digits), and then the market share of each enterprise in each industry segment is calculated. Finally, the market share of all enterprises in each industry segment is summed up to obtain the HHI_A of the industry segment in the current year, the larger the HHI_A is, the weaker the industry competition is.

Analyst attention (Analyst_rep/Analyst_num) is measured by the natural logarithm of the number of analysts and research reports paying attention to the enterprise in a certain period plus one (Yu, 2016; Chang et al., 2006; Wang et al., 2014). The number of analyst attention specifically refers to how many analysts (teams) have tracked and analyzed the company within a year; The number of research reports follows specifically refers to the number of analyst research reports on the company in a year.

Control variable: enterprise Size (Size), which is represented by the logarithm of annual total assets of the enterprise. Asset-liability ratio (Lev), total liabilities divided by total assets at the end of the year. Return on assets (ROA), corporate net profit divided by average balance of total assets. Total asset turnover (ATO), business operating income divided by average total assets. Listed years

(ListAge), the year of the year minus the year of the enterprise listed plus one to take the logarithm. The number of Board of directors (Board) is the natural logarithm of the number of board of directors. Equity balance (Balancel), the shareholding ratio of the second largest shareholder divided by the shareholding ratio of the first largest shareholder. In order to avoid the interference of Industry characteristics and time factors, this paper adds two dummy variables of industry (Industry) and Year (Year) to the model. The measurement and symbols of each variable are shown in Table1.

Table1 Definition of variables

Variable	symbol	Measurement Method
Excess Goodwill	GW excess	(Net Goodwill/Total Assets at Year-End)-Median Standardized Goodwill within the Industry
Integration of Industry and	Intergrate	The Highest Equity Ratio of Banks Held by Enterprises
Enterprise Scale	Size	Natural Logarithm of Total Assets
Debt-to-Asset Ratio	Lev	Total Liabilities at Year-End /Total Assets at Year-End
Return on Assets(ROA)	ROA	Net Profit /Average Total Assets
Total Asset Turnover Ratio	ATO	Operating Revenue /Average Total Assets
Listing Duration	ListAge	Natural Logarithm of(Current Year -Listing Year +1)
Number of Board Members	Board	Natural Logarithm of Number of Board Members
Equity Balance Degree	Balancel	The Ratio of Second Largest Shareholder's Stake to the Largest Shareholder's Stake
Market Competition Degree	HHI-A	The Sum of Squares of Market Shares of All Enterprises within Each Sub-industry
Research Report Attention	Analyst_rep	Natural Logarithm of(Research Report Attention Count +1)
Analyst Attention	Analyst_num	Natural Logarithm of(Analyst Attention Count +1)

2.4.3. Model design

This paper establishes regression model (1) to test the impact of the integration of industry and finance on excess goodwill, and establishes regression models (2) and (3) to test the moderating effect of market competition and analyst attention.

$$GW\ excess_{i,t} = \beta_0 + \beta_1 Intergrate_{i,t} + \beta_2 Intergrate^2_{i,t} + \beta_3 \Sigma Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$GW\ excess_{i,t} = \beta_0 + \beta_1 Intergrate_{i,t} + \beta_2 Intergrate^2_{i,t} + \beta_3 HHI-A_{i,t} + \beta_4 Intergrate_{i,t} \times HHI-A_{i,t} + \beta_5 Intergrate^2_{i,t} \times HHI-A_{i,t} + \beta_6 \Sigma Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$GW\ excess_{i,t} = \beta_0 + \beta_1 Intergrate_{i,t} + \beta_2 Intergrate^2_{i,t} + \beta_3 Analyst_{i,t} + \beta_4 Intergrate_{i,t} \times Analyst_{i,t} + \beta_5 Intergrate^2_{i,t} \times Analyst_{i,t} + \beta_6 \Sigma Controls_{i,t} + \varepsilon_{i,t} \quad (3)$$

Where β is the constant term, $\beta_n(n=1,2,3,\dots,6)$ is the regression coefficient of each

independent variable, subscript i represents the listed company, t represents the year, ε represents the residual term.

2.5. Empirical results and analysis

2.5.1. Descriptive statistical analysis was performed

Table 2 reports the descriptive statistical results of the variables. Descriptive statistics can be used to gain a basic understanding of the study data and thus pave the way for subsequent analyses. The minimum and maximum GW excess values of each enterprise are -0.0228 and 0.328 respectively, indicating that there is a large difference between normal goodwill and excess goodwill among enterprises. The minimum value and maximum value of the degree of Intergrate are 0 and 0.149, indicating that there are differences in the degree of intergrate among enterprises, and some enterprises with a deep degree of intergrate may affect banks' credit decisions. In terms of financial status, the mean value of Lev and ROA is 0.421 and 0.044, respectively. The main characteristics of other variables are similar to those described in other literature, which will not be described here.

Table 2. Descriptive statistical results

Variable	Mean Value	Standard Deviation	Minimum Value	Maximum
GW excess	0.0214	0.0584	-0.0228	0.328
Intergrate	0.0247	0.034	0	0.149
Size	22.06	1.274	19.75	26.05
Lev	0.421	0.207	0.0503	0.891
ROA	0.0440	0.0647	-0.231	0.224
ListAge	1.986	0.941	0	3.296
Board	2.132	0.200	1.609	2.708
Balancel	0.361	0.288	0.00939	0.996
ATO	0.662	0.449	0.0727	2.650
HHI-A	0.128	0.131	0.0195	0.777
Analyst_rep	2.396	1.130	0.693	4.754
Analyst_num	1.979	0.898	0.693	3.829

2.5.2. Univariate analysis

Before the regression analysis, this paper divides the sample enterprises into five groups according to the proportion of banks owned by the enterprises, and conducts mean t-test respectively. As shown in Table 3, with the increase of the integration of industry and finance, the mean difference of excess goodwill in each group shows a trend of nonlinear change. Except for the small difference between group 3 (50-75%) and Group 4 (75-100%), the mean difference between other groups is significant. Therefore, this paper preliminarily conjectures that the relationship between the integration of industry and finance and excess goodwill is not simple linear, and the U-shaped relationship between the two needs further verification.

Table 3. T-test of integration of industry and finance and excess goodwill

Group	N	Mean Difference	T-test
0~25%	693	0.0037816	
25~50%	654	0.006832-0.0030505	2.8583***

50-75%	675	0.00592420.0009078	0.7016
75~100%	672	0.00505250.0008717	0.7761
0~100%		0.00185	2.8731***

2.5.3. Results of regression analysis

Table 4 reports the regression results of the impact of the integration of industry and finance on excess goodwill, as well as the regression results of the moderating effect of market competition and analysts' attention. Model 1 is the basic model, which only includes control variables. In Model 2, the integration of industry and finance and its quadratic term are added into the regression model. Model 3 adds the interaction term of the integration of industry and finance and market competition ($\text{Intergrate2} \times \text{HHI_A}$), and the interaction term of the square term of the integration of industry and finance and market competition ($\text{Intergrate} \times \text{HHI_A}$). In Model 4, the interaction term of integration of industry and finance and analyst attention ($\text{Intergrate2} \times \text{Analyst_num}$) and the interaction term of the square term of integration of industry and finance and analyst attention ($\text{Intergrate} \times \text{Analyst_num}$) are added. In Model 5, the interaction term between the integration of industry and finance and the attention of research reports ($\text{Intergrate2} \times \text{Analyst_rep}$) and the interaction term between the square term of the integration of industry and finance and the attention of research reports ($\text{Intergrate} \times \text{Analyst_rep}$) are added.

The regression results of Model 2 show that the coefficient of the integration of industry and finance is -0.097 , and the coefficient of the square term is 0.778 , both reaching the significant level ($p < 0.01$), which indicates that the excess goodwill decreases first and then increases with the increase of the integration of industry and finance, and there is a U-shaped relationship between the integration of industry and finance and excess goodwill. At the same time, the U-shaped relationship between the integration of industry and finance and excess goodwill is further tested according to the suggestions of Haans et al. (2016) and Yang and Pan (2019). The F test rejects the null hypothesis that the integration of industry and finance and its quadratic coefficient are both zero at the level of 5%. The slope of the integration of industry and finance and excess goodwill is first negative (-0.097 , $p < 0.01$) and then positive (0.135 , $p < 0.01$). The extreme point of the integration of industry and finance is 0.0622 , which is within the 95% Fieller interval $[0.0544, 0.6999]$, and the P value of the U-shaped relationship is less than 0.05 . The null hypothesis is rejected, and the U-shaped relationship between the integration of industry and finance and excess goodwill is verified, so Hypothesis 1 is valid.

Model 3 verifies the moderating effect of market competition. The regression results show that the interaction term between the square term of the integration of industry and finance and the degree of market competition ($\text{Intergrate2} \times \text{HHI_A}$) is significantly negative, which indicates that the fierce market competition has a positive moderating effect on the relationship between the integration of industry and finance and excess goodwill, and the market competition will enhance the U-shaped relationship between the integration of industry and finance and excess goodwill.

Model 4 and Model 5 verify the moderating effect of analyst attention on the relationship between the integration of industry and finance and excess goodwill. This paper divides analyst attention into analyst attention (Analyst_num) and research attention (Analyst_rep). The regression results show that The interaction terms between the squared term of the integration of industry and finance and analyst attention ($\text{Intergrate2} \times \text{Analyst_num}$) and research attention ($\text{Intergrate} \times \text{Analyst_rep}$) are all significantly negative, which indicates that analyst attention has a negative moderating effect on the relationship between the integration of industry and finance and excess goodwill. Analyst attention will weaken the U-shaped relationship between the integration of industry and finance and excess goodwill, so Hypothesis 3 is supported.

Table 4. Regression analysis of fixed effects

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	GW_excess	GW_excess	GW_excess	GW_excess	GW_excess
Intergrate		-0.097***	-0.118***	-0.154***	-0.176**
		[-3.19]	[-4.59]	[-3.71]	[-2.71]
Intergrate ²		0.778***	0.981***	1.518***	1.775***
		[3.39]	[5.19]	[4.42]	[3.09]
Intergrate×HHI_A			0.639***		
			[4.44]		
Intergrate ² ×HHI_A			-5.147***		
			[-3.86]		
HHI_A			-0.002		
			[-0.35]		
Intergrate×Analyst_num				0.051***	
				[3.16]	
Intergrate ² ×Analyst_num				-0.507***	
				[-3.16]	
Analyst_num				0.001*	
				[1.86]	
Intergrate×Analyst_rep					0.049**
					[2.17]
Intergrate ² ×Analyst_rep					-0.509**
					[-2.24]
Analyst_rep					0.001
					[1.30]
Size	0.025***	0.012**	0.011**	0.011**	0.010**
	[3.84]	[2.60]	[2.51]	[2.80]	[2.62]
Lev	-0.020***	-0.019**	-0.013*	-0.006	-0.005
	[-4.88]	[-2.36]	[-1.82]	[-1.18]	[-1.19]
ROA	0.039	-0.020**	-0.019*	-0.017	-0.018
	[1.37]	[-2.61]	[-2.01]	[-0.81]	[-0.86]
ListAge	0.022***	0.006***	0.007***	0.007***	0.007***
	[6.72]	[3.20]	[3.62]	[3.28]	[3.14]
Board	0.004	0.001	0.003**	-0.001	-0.002
	[1.38]	[0.30]	[2.27]	[-0.20]	[-0.41]
Balance1	0.012***	0.005	0.002	0.006	0.006
	[4.73]	[0.65]	[0.38]	[0.72]	[0.74]
ATO	-0.001	0.009*	0.009*	0.007*	0.007*
	[-0.37]	[2.06]	[1.96]	[1.84]	[1.94]
Constant	-0.573***	-0.262**	-0.242**	-0.254***	-0.231**
	[-3.81]	[-2.67]	[-2.61]	[-3.03]	[-2.85]
Year&Industry	control	control	control	control	control
N	2659	2659	2659	2659	2659
R ²	0.1876	0.0866	0.0908	0.0919	0.0901

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

2.5.4. Robustness test

(1) Variable substitution

Zhi-hua wei and excess goodwill, reference cai-yun zhu (2019) study, for the adjustment of the industry average excess goodwill is adopted to improve the robustness test, after standardization of excess goodwill minus the standardization of goodwill in related industry average in the same year were adjusted by the industry average excess goodwill (GW_excess1). Adjust industry average excess goodwill as interpreted variable regression again for the above model. Table5 shows the regression results. The explanatory variable Intergrate and its quadratic term in Model 7-Model 10 are significant. The U-shaped test is further conducted for Model 7, and the F test rejects the null hypothesis that the integration of industry and finance and its quadratic term coefficient are zero at the level of 5%. With melting and excess goodwill inclined lead in negative (- 0.063, $p < 0.1$) after (0. 101, $p < 0.05$), with melting of the extreme value point of 0.0572, in 95% Fieller interval [0.0482, 0.0663], the u-shaped relationship between the overall inspection passed, The U-shaped relationship between the integration of industry and finance and excess goodwill is still valid. Model 8-Model 10 verify the moderating effect of market competition and analyst attention, and the U-shaped relationship and moderating effect are consistent with the null hypothesis, indicating that the results are robust.

Table 5. Robustness test: changing the explained variable

Variable	Model 6	Model 7	Model 8	Model 9	Model 10
	GW_excess 1	GW_excess 1	GW_excess 1	GW_excess 1	GW_exce ss1
Intergrate		-0.631*	-0.118***	-0.154***	-0.176**
		[-1.79]	[-3.16]	[-3.13]	[-2.44]
Intergrate ²		0.552*	0.981***	1.518***	1.775***
		[2.01]	[4.78]	[3.78]	[3.07]
Intergrate×HHI_A			0.639**		
			[4.28]		
Intergrate ² ×HHI_A			-5.147***		
			[-3.55]		
HHI_A			-0.002		
			[-0.43]		
Intergrate×Analyst_num				0.051**	
				[2.92]	
Intergrate ² ×Analyst_num				-0.507***	
				[-3.39]	
Analyst_num				0.001**	
				[2.51]	
Intergrate×Analyst_rep					0.049*
					[2.04]
Intergrate ² ×Analyst_rep					-0.509**
					[-2.46]
Analyst_rep					0.001*
					[1.80]
Size	0.024***	0.012**	0.011**	0.011***	0.011**

	[3.79]	[2.79]	[2.68]	[3.12]	[2.90]
Lev	-0.021 ^{***}	-0.021 ^{**}	-0.015 [*]	-0.007	-0.006
	[-4.82]	[-2.59]	[-2.04]	[-1.36]	[-1.39]
ROA	0.04	-0.021 ^{**}	-0.021 ^{**}	-0.021	-0.022
	[1.43]	[-2.74]	[-2.37]	[-1.10]	[-1.18]
ListAge	0.021 ^{***}	0.006 ^{***}	0.007 ^{***}	0.007 ^{***}	0.007 ^{***}
	[7.30]	[3.33]	[3.89]	[3.66]	[3.51]
Board	0.004	0	0.003 ^{**}	0	-0.001
	[1.28]	[0.11]	[2.16]	[-0.09]	[-0.38]
Balance1	0.013 ^{***}	0.005	0.002	0.006	0.006
	[4.93]	[0.62]	[0.38]	[0.67]	[0.68]
ATO	-0.002	0.008 [*]	0.008	0.006	0.006 [*]
	[-0.55]	[1.82]	[1.75]	[1.68]	[1.78]
Constant	-0.555 ^{***}	-0.276 ^{**}	-0.257 ^{**}	-0.265 ^{***}	-0.245 ^{***}
	[-3.82]	[-2.91]	[-2.83]	[-3.46]	[-3.23]
Year&Industry	control	control	control	control	control
N	2659	2659	2659	2659	2659
R ²	0.1101	0.1319	0.1614	0.1263	0.1269

Note:***, ** and * represent the significance levels of 1%, 5% and 10%, respectively

(2) Interval subsamples were truncated

In order to avoid the impact of the 2008 international financial crisis on this study, this paper intercepts the sub-samples with the interval from 2009 to 2013 for testing. The explanatory variable Intergrate and its quadratic term in Model 11-Model 15 are significant. For Model 12, the U-shaped test and F test reject the null hypothesis that the integration of industry and finance and its quadratic term coefficient are both zero at the level of 1%. The slope of the integration of industry and finance and excess goodwill is first negative (-0.061, p<0.01) and then positive (0.094, p<0.01). The extreme point of the integration of industry and finance is 0.0589, which is within the 95% Fieller interval [0.0522, 0.0655]. U-shaped relationship and competition in the market and analysts focus adjustment, still shows results with robustness.

Table 6. Robustness test: interval subsamples are selected

Variable	Model 11	Model 12	Model 13	Model 14	Model 15
	GW_excess	GW_excess	GW_excess	GW_excess	GW_excess
Intergrate		-0.061 ^{**}	-0.086 ^{**}	-0.232 ^{***}	-0.221 ^{**}
		[-3.56]	[-3.07]	[-4.75]	[-3.52]
Intergrate ²		0.522 ^{**}	0.835 ^{**}	1.812 ^{***}	1.795 ^{**}
		[4.39]	[3.75]	[4.94]	[3.47]
Intergrate×HHI_A			0.459		
			[1.92]		
Intergrate ² ×HHI_A			-4.415 [*]		
			[-2.15]		
HHI_A			0.003 ^{**}		
			[3.43]		
Intergrate×Analyst_num				0.077 ^{**}	
				[4.08]	
Intergrate ² ×Analyst_num				-0.587 ^{**}	

				[-3.69]	
Analyst_num				0.001 ^{***}	
				[4.13]	
Intergrate×Analyst_rep					0.060 ^{**}
					[2.87]
Intergrate ² ×Analyst_rep					-0.487 [*]
					[-2.63]
Analyst_rep					0.001 ^{***}
					[5.30]
Size	0.008 [*]	0.004 ^{**}	0.002 ^{**}	0.003 ^{**}	0.001 ^{**}
	[2.77]	[4.27]	[3.44]	[3.49]	[2.78]
Lev	0.002 ^{**}	0.003	-0.003 ^{**}	0.004 [*]	0.005 ^{**}
	[2.78]	[1.74]	[-4.40]	[2.47]	[3.35]
ROA	0.002	-0.023 [*]	-0.021 [*]	-0.038 [*]	-0.040 [*]
	[0.81]	[-2.26]	[-2.67]	[-2.55]	[-2.74]
ListAge	0.009 ^{***}	0.005 ^{***}	0.005 ^{***}	0.005 ^{***}	0.004 ^{***}
	[24.74]	[5.46]	[5.70]	[7.44]	[7.43]
Board	0.003	0.005	0.006 [*]	0.007 [*]	0.006 [*]
	[1.10]	[1.95]	[2.18]	[2.53]	[2.36]
Balance1	0	-0.001	-0.001	-0.003 ^{***}	-0.003 ^{***}
	[0.52]	[-1.25]	[-1.03]	[-9.71]	[-9.09]
ATO	0.003 ^{**}	0.005 ^{**}	0.004 ^{**}	0.004 ^{**}	0.005 ^{**}
	[3.77]	[3.47]	[3.13]	[2.93]	[3.31]
Constant	-0.191 ^{**}	-0.105 ^{***}	-0.063 ^{**}	-0.085 ^{**}	-0.053 ^{**}
	[-2.84]	[-5.39]	[-3.68]	[-4.04]	[-4.24]
Year&Industry	control	control	control	control	control
N	1627	1627	1627	1627	1627
R ²	0.0937	0.066	0.0558	0.0939	0.0954

Note:***,** and* represent the significance levels of 1%, 5% and 10%, respectively

(3) Control for district fixed effects

Goodwill comes from the M&A activities of enterprises, and the external environment will have an important impact on the M&A goodwill. Table7 reports the specific regression results. The explanatory variable Intergrate and its quadratic term in Model 16-Model 20 are significant. Similarly, the U-shaped test is further conducted on Model 17, and the null hypothesis that the integration of industry and finance and its quadratic term coefficient are zero at the level of 5% is rejected by the F-test. The slope of the integration of industry and finance and excess goodwill is first negative (-0.090, p<0.01) and then positive (0.124, p<0.01). The extreme point of the integration of industry and finance is 0.0625, which is within the 95% Fieller interval [0.0524, 0.0727]. The U-shaped relationship and the moderating effects of market competition and analysts' attention are still valid after adding regional fixed effects, indicating that the results are robust.

Table 7. Robustness test: regional fixed effects are controlled

Variable	Model 16	Model 17	Model 18	Model 19	Model 20
	GW_excess	GW_excess	GW_excess	GW_excess	GW_excess
Intergrate		-0.090 ^{***}	-0.152 ^{***}	-0.217 ^{***}	-0.211 ^{**}
			[-3.10]	[-4.40]	[-3.60]
Intergrate ²		0.718 ^{***}	1.249 ^{***}	1.643 ^{***}	1.740 ^{**}

		[3.19]	[5.21]	[4.32]	[2.85]
Intergrate×HHI_A			0.718 ^{***}		
			[4.27]		
Intergrate ² ×HHI_A			-6.050 ^{***}		
			[-3.92]		
HHI_A			-0.002		
			[-0.75]		
Intergrate×Analyst_num				0.076 ^{***}	
				[3.09]	
Intergrate ² ×Analyst_num				-0.559 ^{***}	
				[-3.14]	
Analyst_num				0.001 [*]	
				[1.78]	
Intergrate×Analyst_rep					0.060 [*]
					[2.06]
Intergrate ² ×Analyst_rep					-0.494 ^{**}
					[-2.16]
Analyst_rep					0.001
					[1.33]
Size	0.026 ^{***}	0.013 ^{**}	0.011 ^{**}	0.011 ^{**}	0.011 ^{**}
	[3.85]	[2.75]	[2.67]	[2.82]	[2.77]
Lev	-0.020 ^{***}	-0.020 ^{**}	-0.013 [*]	-0.005	-0.006
	[-4.62]	[-2.42]	[-1.91]	[-1.11]	[-1.24]
ROA	0.039	-0.020 ^{**}	-0.019 [*]	-0.017	-0.018
	[1.37]	[-2.72]	[-2.06]	[-0.82]	[-0.90]
ListAge	0.022 ^{***}	0.006 ^{***}	0.006 ^{***}	0.007 ^{***}	0.007 ^{***}
	[6.70]	[3.11]	[3.52]	[3.27]	[3.13]
Board	0.005	0.001	0.004 ^{**}	-0.001	-0.001
	[1.47]	[0.51]	[2.57]	[-0.17]	[-0.30]
Balance1	0.012 ^{***}	0.004	0.002	0.006	0.005
	[4.78]	[0.60]	[0.31]	[0.73]	[0.72]
ATO	-0.001	0.008 [*]	0.008 [*]	0.007 [*]	0.007 [*]
	[-0.37]	[1.84]	[1.77]	[1.96]	[1.97]
Constant	-0.564 ^{***}	-0.282 ^{**}	-0.260 ^{**}	-0.259 ^{***}	-0.249 ^{***}
	[-3.84]	[-2.84]	[-2.78]	[-3.07]	[-3.05]
Year&Industry	control	control	control	control	control
Province	control	control	control	control	control
N	2659	2659	2659	2659	2659
R ²	0.1893	0.09	0.0945	0.0928	0.0928

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

2.5.5. Test for endogeneity

(1) Propensity score matching (PSM) test

When making the decision to integrate industry and finance, enterprises will naturally consider some characteristics of themselves, including the concern of future goodwill impairment risk due to premium M&A and the impact of excess goodwill on corporate cash flow. Therefore, enterprises

with excess goodwill are more willing to conclude strategic alliances and form long-term cooperative relationships with banks. This implies that there is a simultaneity between M&A goodwill and the integration of industry and finance, which leads to a causal relationship between them, thus violating the exogeneity hypothesis. Therefore, this paper argues that the "self-selection" problem of M&A premium will lead to the inconsistency of OLS estimates, and using such estimates to explain the role of IFI will lead to wrong results. Therefore, this paper uses the propensity score matching (PSM) method to conduct a robust test to avoid the possible errors caused by "selectivity bias". Enterprise Size (Size), asset-liability ratio (Lev), return on assets (ROA), total asset turnover (ATO), listed years (ListAge), the number of Board members (Board) and equity balance degree (Balance1) are selected to conduct Probit and Logit regression on whether the enterprise integrates industry and finance. The sample size of this paper is small, and the one-to-one matching effect of the nearest neighbor is poor. Therefore, we use the nearest neighbor principle to match four companies with the closest probability of the integration of production and finance, but not the actual integration of production and finance. It can be seen from Table 8 that the ATT gap of the average treatment effect of the treatment group under the Probit model and the Logit model is -0.01284 and -0.01174 respectively, which are both smaller than the ATT gap under the OLS model, and the T value is significant.

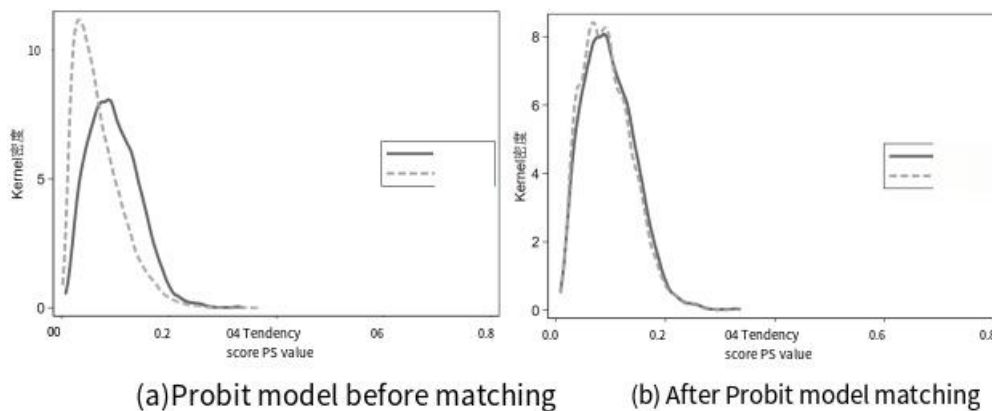
Table 8. Treatment effect of propensity score

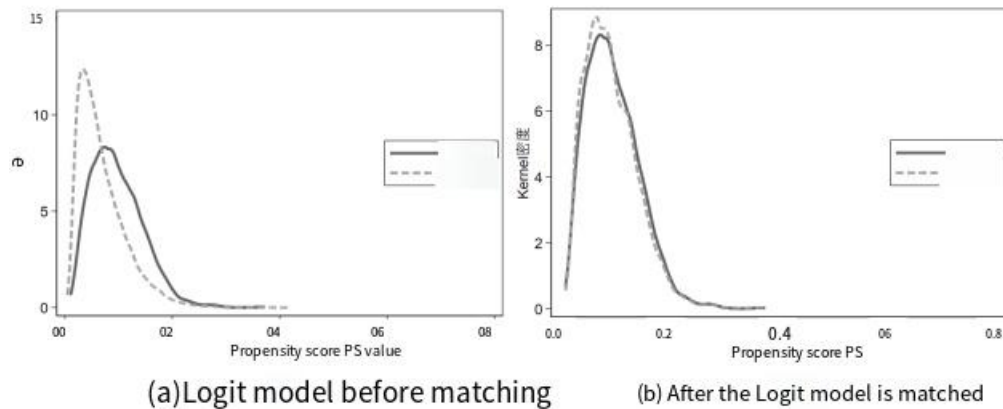
Treatment effect	Treatment group	Control group	Gap	Standard error	T
OLS	0.005	0.023	-0.01762	0.00119	-14.77***
probit ATT	-0.005	-0.018	-0.01284	0.00075	-17.22***
logit ATT	-0.005	-0.017	-0.01174	0.00073	-16.02***

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

It can be seen more intuitively from Figure 2 that there is a significant difference between the excess goodwill generated by M&A under the integration of industry and finance and non-integration of industry and finance before PSM matching, and the difference decreases after PSM matching, that is, the influence of sample "self-selection" on the results is improved.

Figure 2. Kernel density distribution of propensity score





(a) Logit model before matching

(b) After the Logit model is matched

As shown in Table 9, both the Probit model and the Logit model passed the PSM balance test, and the %bias was less than 20% (Rosenbaum and Rubin, 1985), indicating that after the PSM test, the difference in the main characteristic variables between the experimental group and the control group was small, and the matching effect was good.

Table 9. Results of the balance test for matching variables

Probit	Treatment group	Control	Standard	Standard deviation
Size	22.371	22.393	-1.7	93.5
Lev	0.511	0.514	-1.6	96.8
ROA	0.042	0.041	1.0	75.4
ListAge	2.301	2.322	-2.5	93.8
Board	2.199	2.193	3.0	91.9
Balancel	0.291	0.289	0.8	96.8
ATO	0.737	0.730	1.6	90.4
Logit	Treatment group	Control	Standard	Standard deviation
Size	22.371	22.414	-3.3	87.1
Lev	0.511	0.512	-0.7	98.5
ROA	0.041	0.042	-0.4	89.8
ListAge	2.301	2.324	-2.6	93.4
Board	2.199	2.197	1.0	97.3
Balancel	0.291	0.292	-0.4	98.5
ATO	0.737	0.723	3.1	82.1

Model (1) is further tested by using the matched samples. It can be seen from Table 10 that the regression coefficients of Intergrate and its quadratic term under the Probit model and Logit model are still significant and the quadratic term is positive. Both F tests reject the null hypothesis that the integration of industry and finance and the coefficient of its quadratic term are zero at the level of 1%. Under the Probit model, the slant of the integration of industry and finance and excess goodwill is first negative (-0.106 , $p < 0.01$) and then positive (0.143 , $p < 0.01$), and the extreme point of the integration of industry and finance is 0.0635 . The extreme point of the integration of industry and finance is 0.0635 , within the 95% Fieller interval $[0.0531, 0.0739]$; Under the Logit model, the slope of the integration of industry and finance and excess goodwill is first negative (-0.109 , $p < 0.01$) and then positive (0.146 , $p < 0.01$). The extreme point of the integration of industry and finance is 0.0638 , which is within the 95% Fieller interval $[0.0536, 0.0740]$, and the U-shaped relationship is

established. The U-shaped relationship is established, which is consistent with the above test results, and improves the credibility of the research conclusion.

Table 10. Benchmark regression results after PSM

Variable	Probit	Logit
	GW_excess	GW_excess
Intergrate	-0.106 ^{***} [-3.37]	-0.109 ^{***} [-3.55]
Intergrate ²	0.845 ^{***} [3.61]	0.853 ^{***} [3.77]
Size	0.013 ^{**} [2.71]	0.013 ^{**} [2.72]
Lev	-0.021 ^{**} [-2.58]	-0.021 ^{**} [-2.60]
ROA	-0.022 ^{**} [-2.81]	-0.022 ^{**} [-2.82]
ListAge	0.006 ^{***} [3.20]	0.006 ^{***} [3.18]
Board	0.0003 [0.13]	0.0002 [0.09]
Balance1	0.006 [0.85]	0.006 [0.86]
ATO	0.009 [*] [2.02]	0.009 [*] [2.02]
Constant	-0.274 ^{**} [-2.77]	-0.275 ^{**} [-2.77]
Year&Industry	control	control
<i>N</i>	2659	2659
<i>R</i> ²	0.0903	0.0905

Note:***, ** and * represent the significance levels of 1%, 5% and 10%, respectively

(2) Instrumental variable method

In order to further alleviate the conclusion bias caused by reverse causality, this paper uses instrumental variables to conduct two-stage GMM regression. Specifically, this paper uses the one-period-lagged data of explanatory variables and its squared term (namely, the one-period-lagged integration of industry and finance and its squared term) as instrumental variables. In the first stage, the coefficients of the one-period-lagged integration of industry and finance and its squared term are all significant, which meets the selection conditions of instrumental variables. In order to further verify the validity of instrumental variables, we use a variety of statistical tests for evaluation: first, the p values of Underidentification test are all less than 0.01, that is, the null hypothesis of underidentification of instrumental variables is rejected at the significance level of 1%. Secondly, in the Weak identification test, the Cragg-Donald Wald F statistic is 146.025, and the value is 7.03 at the 10% quantile, $146.025 > 7.03$, which rejects the hypothesis of weak instrumental variable. In other words, the correlation between the instrumental variable and the explained variable (excess goodwill) is strong and passes the test. Finally, the number of instrumental variables is equal to the number of explanatory variables in this paper, and there is no overidentification test. The above tests show that the two instrumental variables selected in this paper are reasonable and statistically meet the corresponding requirements. Table 11 reports

the estimation results of instrumental variables and the results of the correlation test of instrumental variables, and the conclusions remain robust after reducing endogeneity.

Table 11. Regression results of instrumental variable method

Variable	IV-GMM
	GW_excess
Intergrate	-0.362 ^{**}
	[-2.04]
Intergrate ²	3.004 ^{**}
	[2.03]
Size	0.015 ^{***}
	[8.59]
Lev	-0.023 ^{***}
	[-4.10]
ROA	-0.021
	[-1.60]
ListAge	0.006 ^{**}
	[1.96]
Board	0.007
	[1.58]
Balance1	0.005
	[1.48]
ATO	0.012 ^{***}
	[4.88]
Year&Industry	control
Underidentification test	0
Weak identification test	146.025
	10% maximal IV size
Overidentification test	7.03
<i>N</i>	0
<i>R</i> ²	1873
	0.102

Note:***,** and* represent the significance levels of 1%, 5% and 10%, respectively

3. Extended analysis

Enterprises with financial impact on excess goodwill may with differences between the enterprise characteristic, therefore this part from the enterprise scale, the ownership of property, further expand the analysis in three aspects: the problem of agency. As for how to alleviate the agency problem, this paper further studies the role of corporate governance from the perspective of supervision mechanism and incentive mechanism, as follows:

3.1. Further analysis based on enterprise scale

Listed companies of different sizes may have different demand and ability of M&A, and the impact of the integration of industry and finance on excess goodwill may be different. As shown in Table 12, this paper divides the samples into two sub-samples of small and medium-sized

enterprises and large enterprises, and further analyzes the relationship between the integration of industry and finance and excess goodwill of the two types of enterprises. For large enterprises, with the increase of the level of integration of industry and finance, the excess goodwill first decreases and then increases. F test rejects the null hypothesis that the integration of industry and finance and its quadratic coefficient are zero at the level of 5%, and the slant of integration of industry and finance and excess goodwill is first negative (-0.154, $p < 0.05$) and then positive (0.165, $p < 0.01$). With melting of the extreme value point of 0.0720, in 95% Fieller interval [0.0661, 0.0780], u-shaped relationship is verified. However, for small and medium-sized enterprises, the U-shaped relationship between the integration of industry and finance and excess goodwill is not significant. The regression results show that the integration of industry and finance helps to restrain the formation of excess goodwill.

The possible reasons are as follows: on the one hand, the M&A demand of small and medium-sized enterprises may be forced by market competition and survival pressure, while the M&A demand of large enterprises may be more motivated by diversified development to earn excess profits. Smaller companies face, on the other hand, the larger the financing constraints, compared with large enterprises, small businesses themselves less disposable resources (xing-quan Yang and wang lili, 2021), a larger face financing constraints of the enterprise is limited by the cost of financing, not all feasible projects for investment, Enterprise managers have to be more cautious when making investment (Harford et al., 2014). Therefore, compared with large enterprises, small and medium-sized enterprises have a weaker ability and willingness to acquire at a premium, and the improvement of financing constraints is not enough to promote the formation of excess goodwill. At the same time, the increase of corporate size makes the supervision cost and difficulty of financial institutions rise, and the credit financing facilities with weaker supervision will further stimulate the formation of excess goodwill. The small size of the company and the low supervision cost of financial institutions can alleviate the financing constraints of the company and bring heterogeneous information to the company, help the company reduce the information asymmetry, and inhibit the formation of excess goodwill.

Table 12. Regression results of enterprise size by group

Variable	Small and medium-sized enterprises	Small and medium-sized enterprises	Large enterprises
	GW_excess	GW_excess	GW_excess
Intergrate	-0.045 [-1.67]	-0.022*** [-3.56]	-0.154** [-2.51]
Intergrate ²	0.266 [0.95]		1.068** [2.70]
Size	-0.0008 [-0.05]	-0.00025 [-0.15]	0.001 [0.53]
Lev	-0.019*** [-3.90]	-0.018*** [-4.10]	0.008** [2.36]
ROA	-0.004 [-0.49]	-0.004 [-0.44]	-0.021 [-1.35]
ListAge	0.009*** [3.10]	0.009*** [3.11]	-0.002** [-2.26]
Board	0.006*** [3.19]	0.007*** [3.14]	0.013* [1.96]

Balance1	-0.002	-0.002	-0.006
	[-0.77]	[-0.74]	[-1.37]
ATO	0.002	0.002	0.002
	[1.40]	[1.31]	[1.74]
Constant	-0.011	-0.008	-0.047
	[-0.31]	[-0.23]	[-1.02]
Year&Industry	control	control	control
<i>N</i>	334	334	682
<i>R</i> ²	0.2091	0.2088	0.2398

Note:***,** and* represent the significance level of 1%, 5% and 10%, respectively

3.2. Further analysis based on the nature of business ownership

Soes and non-soes have different motivations and resource acquisition in the integration of industry and finance, which may have different impacts on the relationship between the integration of industry and finance and excess goodwill. The motivation of the integration of industry and finance of soes is more reflected in the government intervention, while the motivation of the integration of industry and finance of non-soes is more to ease the financing constraints (Li et al., 2017). For soes, the integration of industry and finance under government intervention may not be their own choice, and local governments have the motivation and ability to internalize their promotion goals in the soes under their control (Xia and Fang, 2005). In this case, the integration of industry and finance of soes provides financial support to undertake more political pressure. Local officials and political benefits to its political promotion, will strive to improve economic development within the jurisdiction of fiscal and tax, employment, etc, (Zhou Li Ann, 2004). Mergers and acquisitions can promote local economic development, increase fiscal revenue, increase employment, and facilitate the promotion of government officials. In many cases, government officials in order to record, although the m&a might not be able to bring synergies even harm the interests of the enterprise itself, but it can backward industries, responded to an appeal by the state and stable employment and tax at the same time, under the government's intervention, state-owned enterprises still will choose mergers and acquisitions. Therefore, with the increase of the integration of industry and finance, state-owned enterprises may face more government intervention, so as to carry out some non-economic mergers and acquisitions, and promote the formation of excess goodwill.

In terms of resource acquisition, non-soes face stronger financing constraints than soes (Lu et al. Lu et al, 2012). Non-state-owned enterprises are facing great pressure to survive, and the integration of industry and finance can help improve enterprise resource allocation and restrain the formation of excess goodwill. State-owned enterprises themselves have strong financing ability, and the integration of industry and finance may distort enterprise resource allocation (Li et al., 2017). As with melting degree of deepening state-owned enterprises, Banks are more willing to put the credit resources to further its tilt, there is the phenomenon of "sunny umbrella", facing the financing constraints to further softening, disposable resources, Jensen (1986) argue that a lot of disposable resources will prompt companies to inefficient m&a and diversification blindly. Therefore, in terms of resource acquisition, state-owned enterprises are more likely than non-state-owned enterprises to increase soft budget constraints with the deepening of the integration of industry and finance, which leads to the occurrence of premium mergers and acquisitions and promotes the formation of excess goodwill. To sum up, the U-shaped relationship between the integration of industry and finance and excess goodwill is more significant in state-owned enterprises.

The regression results are shown in Table 13. The quadratic coefficients of the integration of

industry and finance of state-owned enterprises and non-state-owned enterprises are significant, and the U-shaped relationship under the grouping of state-owned enterprises and non-state-owned enterprises is further tested. The F test of state-owned enterprises rejects the null hypothesis that the integration of industry and finance and its quadratic coefficient are both zero at the level of 5%, and the non-state-owned enterprises fail the F test. Under the grouping model of state-owned enterprises, the slant of the integration of industry and finance and excess goodwill is first negative (-0.084, $p < 0.01$) and then positive (0.090, $p < 0.01$). The extreme point of the integration of industry and finance is 0.0717, which is within the 95% Fieller interval [0.0627, 0.0807]. Under the grouping model of non-state-owned enterprises, the extreme point of the integration of industry and finance and excess goodwill is 0.0717, which is negative (-0.093, $p < 0.05$) and then positive (0.117, $p < 0.05$), and the extreme point of the integration of industry and finance is 0.0659, which is within the 95% Fieller range [0.0511, 0.0808]. The U-shaped relationship is established and more significant for soes. Therefore, this paper argues that the reason why the U-shaped relationship between the integration of industry and finance and excess goodwill is more significant for soes than for non-soes is that soes face more government intervention and greater soft budget constraints. For non-state-owned enterprises, the principal agent problem may be the main reason for the U-shaped relationship between integration of industry and finance and excess goodwill, which will be further analyzed below.

Table 13. Regression results of enterprise ownership groups

Variable	state-Owned enterprise	Nonstate-Owned enterprises
	GW_excess	GW_excess
Intergrate	-0.084 ^{***}	-0.093 [*]
	[-3.29]	[-2.13]
Intergrate ²	0.584 ^{***}	0.705 ^{***}
	[3.35]	[2.25]
Size	0.006 ^{***}	0.016 [*]
	[2.89]	[1.99]
Lev	-0.004 [*]	-0.029 ^{**}
	[-2.03]	[-2.15]
ROA	-0.013 ^{***}	-0.006
	[-4.99]	[-0.23]
ListAge	-0.0001	0.010 ^{***}
	[-0.26]	[4.26]
Board	-0.002	-0.001
	[-1.71]	[-0.15]
Balance1	0.005	0.007
	[0.98]	[0.55]
ATO	-0.001	0.013 ^{**}
	[-0.59]	[2.15]
Constant	-0.126 ^{**}	-0.378 ^{**}
	[-2.72]	[-2.19]
Year&Industry	control	control
N	1476	1183
R ²	0.1091	0.1351

Note:***, ** and * represent the significance levels of 1%, 5% and 10%, respectively

4. Conclusions and implications

4.1. Study findings

Based on the panel data of A-share listed companies in Shanghai and Shenzhen Stock exchanges from 2007 to 2021, this paper examines the impact of bank-enterprise integration of industry and finance on excess goodwill, as well as the moderating effect of market competition and analyst attention. The empirical results show that there is a U-shaped relationship between bank-enterprise integration of industry and finance and excess goodwill. When the level of integration of industry and finance is relatively low, improving the level of integration of industry and finance helps to improve corporate financing constraints, reduce information asymmetry, give play to the supervision advantage of banks, and restrain the formation of excess goodwill. However, when the level of integration of industry and finance reaches a certain inflection point, further improving the level of integration of industry and finance will soften the budget constraint of enterprises, weaken the supervision and governance effect of enterprises and banks, and promote the formation of excess goodwill. Further research finds that market competition will enhance the U-shaped relationship between the two. In the early stage of the integration of industry and finance, fierce market competition and bank supervision play a synergistic role to jointly reduce the information asymmetry of enterprises, inhibit the opportunistic behavior of management, and further inhibit the formation of excess goodwill. When the level of integration of industry and finance is high, the financial constraints are further softened and the bank supervision is weakened, which provides financial support for the blind merger and acquisition, diversified development and improvement of market competitiveness of enterprises, and further aggravates the formation of excess goodwill. In the early stage of the integration of industry and finance, analyst attention may increase managers' overconfidence and weaken the governance effect of the integration of industry and finance, and weaken the inhibitory effect of the integration of industry and finance on excess goodwill. With the deepening of the integration of industry and finance, analysts' attention weakens the agency problem, inhibits the opportunistic behavior of executives, and weakens the promotion effect of the integration of industry and finance on excess goodwill. The extended research finds that compared with the large enterprises, the integration of industry and finance helps to suppress the excess goodwill. The impact of the integration of industry and finance in state-owned enterprises on excess goodwill is more significant than that in non-state-owned enterprises, mainly because state-owned enterprises are faced with more government intervention and greater soft budget constraints. Principal-agent problem is a state-owned enterprise with melting and the main reason for the excess goodwill u-shaped relationship. To strengthen corporate governance will help ease the problem of agency, weaken the melt when combined with high degree of excess goodwill.

4.2. Implications for management

First of all, this paper reveals the rule that the excess goodwill fluctuates with the change of bank-enterprise IFI, which provides support for the M&A decisions of enterprises at different levels of IFI. For enterprises with relatively low level of integration of industry and finance, improving the level of integration of industry and finance can help them relieve financing constraints, reduce information asymmetry, and exert the supervision effect of banks. However, for the enterprises with relatively high level of integration of industry and finance, further improving the level of integration of industry and finance will soften the budget constraint, weaken the supervision and governance effect of enterprises and banks, aggravate the agency problem, and promote the formation of excess goodwill. Therefore, when enterprises are faced with financial pressure or lack of heterogeneous resources, it is difficult to carry out reasonable M&A, we should consider the impact of the

integration of industry and finance on M&A. For enterprises with low level of integration of industry and finance, they can boldly improve the level of integration of industry and finance without worrying too much about the opportunistic behavior of management; For enterprises with high level of integration of industry and finance, it is necessary to consider whether the internal governance can effectively alleviate the agency problem when improving the level of integration of industry and finance.

Secondly, this paper provides differentiated suggestions on the integration of industry and finance for different types of enterprises, so that it can better promote the high-quality development of enterprises. (1) Considering that there may be differences in M&A demand and M&A ability of listed companies of different sizes, large enterprises' M&A demand is more for diversified development, to earn excess profits, and large enterprises have strong financing ability, so we should pay special attention to the positive impact of the integration of industry and finance on excess goodwill, and control the level of the integration of industry and finance within a reasonable range; The M&A demand of small and medium-sized enterprises is forced by market competition and survival pressure, and small and medium-sized enterprises have less disposable resources, so they can actively improve the integration of industry and finance to help their own high-quality development; The government can help the integration of industry and finance of small and medium-sized enterprises through policy support. (2) Considering the differences in motivation and resource acquisition of the integration of industry and finance among listed enterprises with different ownership nature, soes are faced with more government intervention and greater soft budget constraints. Therefore, the government should strengthen the supervision of the integration of industry and finance of soes to avoid the phenomenon of "giving umbrella on sunny days" and prevent the integration of industry and finance from becoming the booster of "promotion tournament"; Non-state-owned enterprises should pay attention to the impact of the integration of industry and finance on the acquisition of resources. However, the strong agency problem in non-state-owned enterprises is more likely to promote the formation of excess goodwill.

Finally, this paper finds the impact of market competition and analysts' attention on the U-shaped relationship between the integration of industry and finance and excess goodwill, which can help enterprises to make appropriate decisions under different external environments and promote efficient M&A. When the market competition is fierce, enterprises with relatively low level of integration of industry and finance can consider improving the level of integration of industry and finance to help them obtain more heterogeneous resources. Enterprises with relatively high level of integration of industry and finance should formulate reasonable diversification strategies to avoid blind merger and acquisition. At the same time, managers should treat analysts' attention reasonably and avoid carrying out inefficient M&A due to blind optimism and overconfidence.

4.3. Research limitations and future prospects

First of all, this paper only studies the impact of bank-enterprise integration of industry and finance on excess goodwill, and the impact of other integration of industry and finance models on excess goodwill needs further exploration. Secondly, this paper only considers the moderating effect of market competition and analysts' attention, so more scenarios can be considered in the future to enhance the guiding significance for the reality. Finally, this paper examines the main reasons for the U-shaped relationship between the integration of industry and finance and excess goodwill of soes and non-soes by grouping.

References

- [1] Zhang Xin & Dong Zhu. *Research on the impact of excess goodwill on enterprise innovation [J]*. *Nankai Business Review*, 2012,25(05):16-30.
- [2] Qing Chen, Zhang Xinmin. *M&a Goodwill and its impairment: criteria evolution and literature review [J]*. *Financial Research*,2023,(05):30-44.]
- [3] Tan J, Quan X F, Xu G W et al. *Does goodwill impairment affect the quality of enterprise innovation? Audit & Economics Research*,2023,38(02):116-127.
- [4] Zhang Zifeng. *Excess goodwill and debt default: a study on the signal effect of performance volatility [J]*. *Modern Finance and Economics (Journal of Tianjin University of Finance and Economics)*,202,42(06):51-71.]
- [5] Deng Mingmao & Mei Chun. *The Damoks Sword of High premium M&A: Goodwill and stock price crash risk [J]*. *Journal of Financial Economics*,2019,34(06):56-69.]
- [6] Wei Zhihua, ZHU Caiyun. [6] [Wei Z H, Zhu C Y. *Whether excess goodwill becomes business burden: an explanation from the perspective of product market competitiveness [J]*. *China Industrial Economics*,2019(11):174-192.
- [7] [Li W A, Ma C. *"Industry + finance" model of integration of industry and finance and enterprise investment efficiency: based on the research of Chinese listed companies holding financial institutions [J]*. *Journal of Financial Research (2014)*,(11):109-126.]
- [8] Fan, M., Wang, J. & Xu, J. [8] [FAN M M, WANG J, XU J N. *The impact mechanism of the integration of industry and finance on dual innovation investment: based on the heterogeneous impact of firm size and internal control [J]*. *Science and Technology Management Research*,2024,44(01):10-17.
- [9] Lu, Z.F. , J.G. Zhu, and W. N. Zhang. *Evidence from China. Journal of Banking and Finance*, 36(2): 341-354
- [10] Wang Yiqu, Xie Meng. *Can the Integration of industry and finance promote the transformation and upgrading of industrial structure? Based on innovation effect and resource allocation effect [J]*. *Business Research*,2023(01):20-28.
- [11] LIU Shuyan, Guo Hongyun. *Journal of Qingdao University of Science and Technology (Social Science Edition)*,2021,37(01):61-67.]
- [12] Coase R H. *the nature of the firm [J]*. *Economica*, 1937,4 (16):386-405.
- [13] Lin, Y. *Effect of Chinese listed companies with financial analysis - based on equity participation: an empirical study of private financial institutions perspective [J]*. *Nankai Business Review*, 2010(5):153-160.
- [14] Teece D J. *Internal organization and economic performance: An empirical analysis of the profitability of principal Firms [J]*. *Journal of Industrial Economics*, 1981, 30(2):73-199.
- [15] [Li W J & Li B M. *"Real + finance" : financing constraints, policy catering or market competition? [15] Li, W. & Li, C. Journal of Financial Research*,(08):100-116 (2017).
- [16] Wan Liangyong, Liao Mingqing, Hu Jing. [16] *The integration of industry and finance and corporate financing constraints: an empirical study based on listed companies' Shareholding in banks [J]*. *Nankai Business Review*,2015,18(02):64-72+91.
- [17] Zhang, X., Ye, Z. & Hu, C. [17] *How the integration of industry and finance serves the real economy: evidence based on commercial credit [J]*. *Nankai Business Review*,2021,24(01):4-16+19-20.]
- [18] Du Chuanzhong & Jin Huawang. [18] *The integration of industry and finance, capital allocation efficiency and total factor productivity of manufacturing industry [J]*. *Research of Economics and Management*,2021,42(02):28-40.]

- [19] Tian L H, Wang K D, Ma J et al. [19] [Tian L H, Wang K D, Ma J, et al. *Impact of the integration of industry and finance on corporate innovation: Resource synergy or resource curse?* [J]. *China Economic Quarterly*, 2012,22(06):1891-1912.
- [20] Li Haitong, Wang Huacheng, Cao Feng. [20] [Li H T, Wang H C, Cao F. *Industry-finance cooperation and corporate investment efficiency: a quasi-natural experiment based on pilot cities.* *Nankai Business Review*,1-26.
- [21] He, S. & Ren, L. [21] [He S Y, REN L. *The impact of excess goodwill on Equity pledge behavior of controlling shareholders* [J]. *Business Management Journal* , (7):177-192 (2021).
- [22] Gu, F., Lev, B. *Overpriced shares, ill-advised acquisitions, and goodwill impairment.* 1995-2022.
- [23] Li, D., Ye, J., Lu, S. et al. *Management overconfidence, the nature of property rights and m&a goodwill* [J]. *Journal of accounting research*, 2018, (10) : 50-57.
- [24] Shi W, Hoskisson R E, Zhang Y A. 2017. *Independent director death and CEO acquisitiveness: Build an empire or pursue a quiet life?* [J]. *Strategic Management Journal*, 38(3):780-792.
- [25] Mueller D C, Sirower M L. 2003. *The causes of mergers: Tests based on the gains to acquiring firms share holders and the size of premia* [J]. *Managerial and Decision Economics*, 24(5):373-391.
- [26] Hu, F. & Li, K. *Stock price overvaluation and goodwill impairment risk* [J]. *Journal of Financial and Economic Research*, 2019, 45 (6) : 71-85.]
- [27] XU Gang. *Does fulfilling corporate social responsibility restrain Goodwill bubble?* [J]. *Auditing & Economics Research* , (1) : 90-99 (2020).
- [28] Zhang, X., Qing, C. & Yang, D. et al. [28] [Zhang X M, Qing C, Yang D G. *Internal control and goodwill bubble suppression: empirical evidence from Chinese listed companies* [J]. *Journal of Xiamen University (Philosophy and Social Sciences)* , (3) : 55-65 (2018).
- [29] Varaiya, N.P. *Determinants of Premiums in Acquisition Transactions.* *Managerial and Decision Economics*, 1987, 8(3):175-184
- [30] Slusky, A. R., and R. E. Caves. *The Journal of Industrial Economics*, 39(3) : 277-296.
- [31] Rajan, R.G. 1992. 1367-1400.
- [32] Diamond, D. W. 1984. *Financial Intermediation and Delegated Monitoring.* *The Review of Economics Studies*, 51: 393-414
- [33] Wu, C., Wu, S., Cheng, J. et al. [33] [WU C P, Wu S N, Cheng J Y, et al. *An empirical study on the impact of venture capital on the investment and financing behavior of listed companies* [J]. *Economic Research Journal*, 2012, 47(01):105-119+160.]
- [34] YUAN L, Liang Y S. [34] Yuan, L. & Liang, Y. *Journal of Harbin University of Commerce (Social Science Edition)*, (06):31-46 (2023).
- [35] Norden, L., Weber, M. *Credit Line Usage, Checking Account Activity, (06) : 31-46. and Default Risk of Bank Borrowers.* *Review of Financial Studies*, 2010 (23) : 3665-3699
- [36] Jensen M C. *Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers.* 76 (2) : 323-329.
- [37] Harford, J. *Corporate Cash Reserves and Acquisitions* [J]. *The Journal of Finance*, 1999(6):1969-1997.
- [38] Xiao J. *Stock Market Cycle and Fund investors' Choice* [J]. *China Economic Quarterly* , 2013, 12(04):1299-1320.
- [39] Shi Y D, Li Z W & Chen W. [39] [Shi, Y., Li, Z. & Chen, W. *Journal of Financial Research*, 2009, (11):129-142.]
- [40] Thaler, R. H. , E. J. Johnson. 1990. *The Effects of Prior Outcomes on Risky Choice.* *Management Science*, 36 (6) :643-660

- [41] Zhang, L. & Zhang, H. [41] Zhang, L. & Zhang, H. *Industrial Economics Research*, (02):58-67 (2015).
- [42] Burks J J, Christine C, Joseph G, et al. *Competition and voluntary disclosure: Evidence from deregulation in the banking industry. Review of Accounting Studies*, 2018,23 (4) : 1471-1511.
- [43] Zhao, Y., Lai, P. & Wang, M. *Can Product Market competition restrain Excess Goodwill? Auditing & Economics Research*,2023,38(02):78-86.
- [44] Porter, M. , 2008, *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, New York: Simon &Schuster Ltd.
- [45] Fu, L. & Jie, Q. *How does analyst following affect M&A performance? Moderating mediating effect identification [J]. Journal of Hainan University (Humanities and Social Sciences Edition)*,2023,41(02):124-132.
- [46] Yu Minggui, ZHONG Huijie, Fan Rui. [46] [Yu M G, Zhong H J, Fan R. *Analyst attention and firm innovation: empirical evidence from China's capital market [J]. Business Management Journal*,2017,39(03):175-192.]
- [47] Feng X L., Li Z W., Deng X R. [47] [Feng X L, Li Z W, Deng X R. *Network attention and enterprise growth: from the perspective of enterprise life cycle. Contemporary Economic Science*,2021,43(05):128-140.]
- [48] GUO Jian-luan, JIAN Xiao-tong. [48] Guo, J. & Jian, X. *Journal of Central University of Finance and Economics*,(02):73-88 (2021).
- [49] Dyck A, Morse A, Zingales L. *Who Blows the Whistle on Corporate Fraud? The Journal of Finance*, 2010,65 (6) : 2213-2253.
- [50] Sun S L, Zhang F Y, Zheng J M, et al. [50] [Zhang F Y, Zheng J M, et al.*Can the lifting of short sale constraints restrain the M&A goodwill bubble? Journal of Financial Research*,2021,(11):189-206.
- [51] Guo, Z. & Huang, J. [51] [Guo Z R, Huang J. *High quality audit and goodwill bubble of listed companies [J]. Auditing Research* , (4) : 80-89 (2020).
- [52] RAMANNAK. *The implications of unverifiable fair-value accounting: evidence from the political economy of goodwill accounting. Journal of Accounting and Economics*, 2008, 45 (2) : 253-281.
- [53] Tan X F., Guo L., Hu Y. [53] [Tan X F, Guo L, Hu Y Y. *Macroeconomic Research*,(10):133-142+175 (2016).]
- [54] Zhang, Q. & Sun, J. [54] [Zhang Q L, Sun J T. *Corporate performance analysis of the effectiveness of domestic financing integration [J]. China Industrial Economics*, 2007(7) : 96-102.
- [55] Yang, X., Liu, Y. & Cong, Z. nan. [55] [Yang X Y, Liu Y H, Cong Z N. *The impact of industrial policy on the integration of industry and finance: empirical evidence from Chinese A-share listed companies [J]. Reform of Economic System*,2023(04):88-96.
- [56] Haveman H. A., Jia N., Shi J., et al. *The Dynamics of Political Embeddedness in China Administrative Science Quarterly*, 2017,62(1):67-104
- [57] Lian, Y., Ye, W. & Liu, J. [57] [Lian Y L, Ye W P, Liu Y L. *Deviation between industry competition expectation and organization strategy: An empirical analysis based on Chinese manufacturing listed companies [J]. Management World*, 2019, 35(8):155-172
- [58] Yu F F. *Analyst Coverage and Earnings Management. Journal of Financial Economics*, 2008, 88 (2) : 245-271.
- [59] Chang X, Dasgupta S, Hilary G. *Analyst Coverage and Financing Decisions*. 3009-3048.
- [60] Wang S S, LAN Z H, Yu Z, et al. [60] [Wang S S, LAN Z H, Yu Z, et al.*Research on the external supervision effect of analysts' attention [J]. Journal of Dalian University of Technology (Social Science Edition)*, 2014 (3) : 33-38.]

- [61] Haans, J.R., C. Pieters, and Z. He. *Thinking About U: Theorizing and Testing U- and Inverted U-Shaped Relationships in Strategy Research*[J]. *Strategic Management Journal*, 2016, 37, (7): 1177-1195.
- [62] Yang Liu, Pan Zhen. [62] [Yang L, Pan Z. *The Dynamic relationship between financial flexibility and corporate performance: an analysis of the moderating effect based on financial constraints and agency costs* [J]. *Research on Economics and Management*,2019,40(04):125-144.
- [63] Rosenbaum, P. , and D. Rubin. "Constructing a Control Group Using Multivariate Matched Sampling Methods that Incorporate the Propensity." *The American Statistician*, 39(1) : 33-38.
- [64] Yang, X. & Wang, L. [64] Yang, X. & Wang, L. *Journal of Finance and Economics*,(07):79-89 (2021).
- [65] Harford J.,Uysal V. B. *Bond Market Access and Investment Journal of Financial Economics*, 2014, 112 (2) : 147-163
- [66] Xia, L. & Fang, Y. [66] [Xia L J, Fang Y Q. *Government control, governance environment and corporate value: Empirical evidence from Chinese securities market. Economic Research Journal*,2005,(05):40-51.
- [67] Zhou, L. (2005). [67] *The Incentive and cooperation of Government officials in the Promotion Game: Also on the reasons for the long-term existence of local protectionism and repeated construction in China. Economic Research Journal*,2004,(06):33-40.
- [68] An, S., Zhang, J. & Zhang, Z. [68] An, S., Zhang, J. *Friends of Accounting* ,(01):129-138 (2024).
- [69] Ang,S.,A.Cole,and W.Lin, "Agency Costsand Ownership Structure",*Journal of Finance*, 2000,55 (1),81-106.
- [70] Chen,Q . , X.Chen,K.Schipper,Y.Xu,and J . Xue, "The Sensitivity of Corporate Cash Holdings to Corporate Governance " , *Review of Financial Studies*,2012,25(12),3610-3644
- [71] Zhang, H. & Lu, Z. [71] [Zhang H L, Lu Z F. *Cash distribution, corporate governance and overinvestment: An investigation based on the cash holdings of listed companies and their subsidiaries in China. Management World*,2012,(03):141-150+188.
- [72] Xu, Z., Gan, S. & Wang, Q. [72] *Corporate governance, financial comfort and excess Goodwill* [J]. *Statistics and Decision*,2023,39(09):168-172.]