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Analysts' perspective on the impact of digital transformation on corporate risk-taking levels

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Abstract: *This paper examines the effect of digital transformation on corporate risk-taking level and the mechanism of digital transformation on corporate risk-taking level based on the perspective of analysts' attention, taking the data of A-share listed companies in Shanghai and Shenzhen from 2014 to 2023 as the research sample. The results show that digital transformation has a significant positive impact on the level of corporate risk-taking. Analyst attention shows a significant mediating effect in between. The heterogeneous test shows that, compared with high-tech industries, the higher the degree of digital transformation in non-high-tech enterprises, the more it is conducive to enhancing analyst attention, thereby strengthening the enhancement effect of the level of corporate risk-taking. This paper expands the research boundary of the relationship between digital transformation and risk-taking level from the perspective of analyst attention, and provides a theoretical basis for optimizing the digital strategy layout of enterprises, improving the governance mechanism of technology-enabled, and enhancing the quality of risk decision-making.*

Keywords: *Digital transformation; Risk-taking level; Analyst attention*

1. Introduction

With the iterative evolution of digital technology, the digital economy has become an important driving force for economic growth in our country. The 20th National Congress of the Communist Party of China clearly proposed that the coordinated development of the digital economy and the real economy should be taken as the path, and industrial upgrading should be driven by technological innovation to create a globally competitive digital industry ecosystem. As the core carrier driving the development of the digital economy, enterprises can strengthen the efficiency of data collection, integration and analysis by introducing intelligent algorithms and digital platforms, capture market dynamics and consumption trends in real time, and then build differentiated competitive advantages. Existing studies have widely confirmed that the application of digital technology has a significant empowering effect on enterprise value creation. Qi Yudong and Xiao Xu (2020)[1]pointed out that new generation information technologies such as blockchain and artificial intelligence have data penetration capabilities. This digital link mechanism breaks down information barriers, promotes the efficient flow of resources between organizations, and promotes the formation of a multi-dimensional interactive social network between enterprises. Jing Wenjun and Sun Baowen(2019)[2]demonstrate the interconnectivity characteristics of digital technology, optimize the quality of transaction information, and thereby improve the efficiency of resource allocation and enterprise production efficiency. Wu Fei et al. (2021)[3] Research shows that in the process of implementing digital strategies, enterprises will dynamically adjust the innovation path and increase the intensity of R & D investment to improve production efficiency. In addition, scholars have further studied and found that digital transformation of enterprises can also improve operational efficiency through business process optimization mechanisms (Chen Jian et al., 2020[4]), optimize the competitive advantage of human capital structure (Zhao Chenyu et al., 2021[5]), etc. Existing studies recognize the positive effects of digital transformation, which lays a good research foundation for exploring its internal and external governance impacts.

It is worth noting that while promoting digital transformation, the report of the 20th National Congress of the Communist Party of China emphasizes "the need to improve risk prevention and control mechanisms and maintain economic and social stability," highlighting the key position of risk management in the national governance system. The level of enterprise risk-taking reflects the preference level of corporate decision-makers for risky investments, that is, the decision-making tendency of management to be willing to bear potential losses in order to achieve value-added goals. Existing studies have confirmed that the level of enterprise risk-taking, as an important symbol of

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capital allocation efficiency, directly affects its investment decisions in high-risk and high-return projects (Yu Minggui et al., 2013[6]). Moderate risk-taking levels can drive total factor productivity improvement by promoting technological innovation iteration (Ma Lianfu and Du Shanzhong, 2021[7]); conversely, lower levels of enterprise risk-taking may inhibit output, resulting in innovation projects with positive net present value but higher risk being shelved, thereby damaging enterprise performance (Huang Dayu et al., 2023[8]). Based on this, in-depth analysis of the influencing factors of enterprise risk-taking can improve the efficiency of capital allocation, provide theoretical support for building an innovation-friendly policy system, and ultimately promote high-quality macroeconomic development.

As the information intermediary of capital markets, analysts can analyze the financial data, strategic layout and investment value of enterprises in a timely manner by means of professional knowledge and market surveys after integrating multiple information, and convey information to the market through reports (Hong et al., 2000[9]); at the same time, with in-depth industry knowledge, analysts can also explore potential value information (Healy & Palepu, 2001[10]), and improve the market information set with the help of profit forecasts, investment ratings and other adjustments (Chen & Matsumoto, 2006[11]). In summary, analysts' attention is crucial to the optimization of the corporate governance system.

This study finds that when the existing literature explores the mechanism of digital transformation on enterprise risk-taking, it rarely explains the intrinsic relationship between the two from the perspective of analysts' attention. Therefore, this paper uses the data of Shanghai and Shenzhen class A share listed companies from 2014 to 2023 as a research sample. First, it examines the direct effect of digital transformation on risk-taking level, then verifies the intermediary effect of analysts' attention, and finally examines the structural difference of action mechanism from the perspective of industry heterogeneity. The theoretical contributions of this study are mainly reflected in: (1) Deepen the theoretical framework of the research field of enterprise digital transformation and risk-taking by building the theoretical connection between digital transformation and risk-taking level. (2) Different from traditional research focusing on innovation performance, transaction costs and other transmission paths, this study starts from the perspective of analysts' attention to reveal the transmission mechanism of analysts' attention in the process of digital transformation affecting risk-taking. The study shows that analysts' attention to the dual path of information production and governance supervision constitutes a key bridge for digital transformation to promote the level of risk-taking. It provides a new theoretical perspective for understanding the economic consequences of digital technology. (3) Combined with the Chinese institutional background, this study further reveals the differential mechanism of digital transformation under the characteristics of industry heterogeneity. Empirical findings show that compared with high-tech enterprises, analysts focus on the role of digital transformation in promoting risk-taking in non-high-tech enterprises. This finding not only enriches the contextual study of digital transformation, but also provides a theoretical reference for the government to formulate industry differentiation policies.

2. Theoretical analysis and research assumptions

2.1. Digital transformation and enterprise risk-taking level

Enterprise digital transformation is essentially driven by data elements and relies on information technology to reconstruct the enterprise value system. It mainly affects the enterprise's governance structure and operation ecology from the perspectives of decision-making subjects, governance mechanisms and resource acquisition, and promotes the systematic improvement of risk-bearing level. From the perspective of decision-making subjects, management's attitude towards risk is constrained by the efficiency of information processing. The in-depth application of digital technology not only helps enterprises achieve data standardization and structured processing, but also reconstructs information transmission paths and improves transmission efficiency (Wu Fei et al., 2021[3]; Zhai Huayun and Li Qianru, 2022[12]), effectively compressing the time lag of information processing. This technology empowers managers to accurately identify market opportunities, optimize resource allocation efficiency (Tu Xinyu and Yan Xiaoling, 2022[13]), reduce path dependence on traditional experience, improve decision-making accuracy (Qi Huaijin et al., 2020[14]), and significantly enhance management's ability to evaluate and execute high-risk projects. It is conducive to improving the level of risk-taking in enterprises. From the perspective of governance mechanism, principal-agent conflict is the core obstacle restricting enterprise risk-taking. Enterprise digital transformation through the information sharing mechanism constructed by the digital platform reduces the cost of information acquisition for stakeholders (Wu Wuqing et al., 2024[15]), forming a multi-dimensional supervision

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network. This increase in transparency effectively curbs management's opportunistic behavior (Huang Dayu et al., 2021[16]), prompts decision-making to tilt the focus towards the long-term value of the enterprise, improves the quality of risk decision-making, and increases the level of enterprise risk-taking. At the level of resource acquisition, venture investment decisions are usually accompanied by significant resource depletion effects, which is the material basis for enterprise risk-taking. When internal cash flow is insufficient to support demand, enterprises need to obtain financial support through external financing channels. Digital technology can restructure financing channels, broaden the inclusive objects of finance, and improve the availability of external financing for enterprises (Huang Yiping and Huang Zhuo, 2018[17]); it can also reduce financing costs, Huang Dayu et al. (2021)[16]Research found that intelligent credit evaluation systems reduce financing costs to 67% of traditional models, especially in high-risk project financing spreads by 5.8%, effectively relieving corporate financing pressure. This capital accessibility and financing cost advantage can significantly drive management to make risk-based investment decisions, and ultimately improve the level of corporate risk-taking.

Based on this, this paper proposes the following hypotheses:

H1: Digital transformation has a significant positive impact on the level of corporate risk-taking.

2.2. Digital transformation, analyst focus and corporate risk-taking

Analysts mainly focus on the information sharing and cognitive coordination among market participants through the mechanism of information production and transmission. According to the theory of limited, individuals have limited attention when processing information or performing multiple tasks, and there is a significant selective attention feature according to the theory of attention allocation (Fang Junxiong et al., 2018[18]). And digital transformation enterprises improve information transmission efficiency and enhance industry comparable information through standardized data disclosure and intelligent financial reporting (Liu Shaobo et al., 2021[19]). This optimization of information structure allows analysts to reduce tracking costs. At the same time, analysts' income is closely related to the accuracy of their analysis and prediction. Therefore, analysts are more willing to analyze companies with high digital maturity (Fang Junxiong, 2007[20]), and then form continuous attention incentives. At the same time, digital technology innovation has been promoted to the core issue of the national strategic level. This increase in strategic visibility has enabled digital enterprises to form a significant attention premium effect in capital markets. Therefore, enterprise digital transformation can increase analysts' attention. The increase in analysts' attention affects the level of corporate risk-taking through a dual path. First, the increase in analysts' attention can improve market transparency, strengthen internal governance mechanisms, alleviate the problem of information asymmetry between management and investors, and force management to reduce short-sighted behavior and pay more attention to long-term value creation through supervision effects, thereby reducing agency costs (Zhou Chen et al., 2023[21]), effectively improving short-termism and enhancing investment capabilities in high-risk projects. Second, analysts focus on reducing the cognitive bias of market participants by providing investors with an enterprise value evaluation framework (Liu Yaoyao et al., 2022 [22]), so that Financial Institution Group can more accurately evaluate the risk-return characteristics of enterprises, improve credit availability and equity financing efficiency, and then enhance the financial resilience of enterprises. In order to improve the sustainable capital supply ability of high-risk projects, this paper effectively drives the improvement of enterprise risk-bearing level.

Based on this, this paper proposes the following hypothesis:

H2: Digital transformation promotes the level of enterprise risk-taking through the improvement of analyst attention, that is, analysts focus on playing a part of the intermediary role in the relationship between digital transformation and risk-taking level.

3. Study design

3.1. Sample selection and data sources

In order to focus on the impact and action path of digital transformation on the level of enterprise risk-taking, this paper uses the data of Shanghai and Shenzhen class A share listed companies from 2014 to 2023 as the research sample. The sample screening criteria include: (1) excluding financial and insurance companies; (2) excluding ST, * ST and companies that have been listed for less than one year;

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(3) excluding companies with missing values; (4) 1% double-tailing of continuous variables. The financial data are all derived from the CSMAR database. The processing work is completed through Excel 2010 and Stata 17.

3.2. Variable Definition

(1) Interpreted Variable. This paper selects the level of enterprise risk-taking as the explained variable. This paper uses earnings volatility as a proxy variable for the level of enterprise risk-taking. The index is constructed through the following steps: First, refer to the research method of He Ying et al. (2019)[23], take the ratio of interest and tax to total assets at the end of the year ROA minus the annual industry average as the industry adjusted ROA (Adj_ROA), and finally calculate the standard deviation of Adj_ROA in a three-year rolling window (t-2 to t years) to reflect the characteristics of corporate income fluctuations. At the same time, refer to the processing method of Song Jianbo et al. (2017)[24], multiply the result by 100 to get Risk. The processing of the dimension can make the result more intuitive and does not affect its significance level. The larger the value of Risk, the higher the level of risk-taking of the enterprise. The specific formula is as follows:

$$\mathrm{Adj\_ROA_{it}} = \mathrm{ROA_{it}} - \frac{\sum_{j=1}^{n} \mathrm{ROA_{jt}}}{n} \tag{1}$$

$$\mathrm{Risk_{it}} = 100 * \sqrt{\frac{1}{T-1}\sum_{t=1}^{T}(\mathrm{Adj\_ROA_{it}} - \frac{1}{T}\sum_{t=1}^{T}\mathrm{Adj\_ROA_{it}})} \,|T = 3 \tag{2}$$

Among them, n is the total number of enterprises in the industry; j is the j-th enterprise in the industry; i and t represent the company individual and year, respectively.

(2)Explanatory variables. This paper selects digital transformation (DT) as the explanatory variable. According to the research methods of Wu Fei et al. (2021)[3]and Xiao Tusheng et al. (2022)[25], the degree index (DT) of enterprise digital transformation is constructed. The specific steps are as follows: firstly, based on the five dimensions of artificial intelligence, blockchain, cloud computing, big data and digital technology application, the construction of the digital technology keyword thesaurus is carried out; secondly, the semantic recognition of the annual reports of listed companies in the Guotai'an CSMAR database is carried out by using text analysis method, and the frequency of keywords in each dimension is counted; finally, the word frequency of the five dimensions is summed up and the natural logarithm is taken to quantify the digital transformation level of the enterprise.

(3)Mediating variables: The mediating variable in this paper is Analyst Attention (ANA), and the number of analysts tracked is used as a proxy variable. The specific calculation method is to count the number of analysts (teams) tracking enterprises in that year, refer to the research methods of Pan Yue et al. (2011)[26]and Chen Qinyuan et al. (2017)[27], and eliminate the dimensional impact through natural logarithmic transformation (ln (number of analyst teams + 1)) to quantify the degree of analyst attention.

Table 1: Main variable definitions and calculation methods

Variable	symbols	definitions and calculations
risk-taking level	Risk	See formulas 1 and 2
Digital transformation index	DT	Ln (total word frequency + 1)
analyst attention	ANA	Ln (number of analysts tracking a company + 1)
firm size	Size	Ln (total assets)
asset-liability ratio	Lev	Total liabilities/total assets
return on equity	ROE	Net profit/shareholders' equity
firm age	Age	Ln (years of establishment)
board size	Board	Ln (Number of Board Members)
operating income growth	Growth	Year-on-year growth rate of main business income
ownership concentration	Top1	The largest shareholding ratio
industry	Ind	Control industry effects
Year	Year	Control year effect

(4) Control variables. Based on the existing literature, this study adds the following control variables to the regression model: firm size (Size), asset-liability ratio (Lev), return on equity (ROE), firm age (Age), board size (Board), operating income growth (Growth), ownership concentration (Top1), and sets the annual dummy variable (Year) and industry dummy variable (Ind) to control the

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time effect and industry characteristics. See Table 1 for specific variable definitions and calculation methods:

3.3. Model construction

Based on theoretical analysis, this study draws on the model construction method of Hu Jie et al. (2022)[28], and constructs the following regression equation to test the impact of digital transformation on risk-taking:

$$\mathrm{Risk}_{it} = \beta_0 + \beta_1 \mathrm{DT}_{it} + \sum_j \beta_j \mathrm{Controls} + \lambda_i + \mu_i + \varepsilon_{it} \tag{3}$$

To validate the intermediary transmission effect that analysts focus on in Hypothesis 2, this paper builds the following model:

$$\mathrm{Risk}_{it} = \beta_0 + \beta_1 \mathrm{DT}_{it} + \sum_j \beta_j \mathrm{Controls} + \lambda_i + \mu_i + \varepsilon_{it} \tag{4}$$

$$\mathrm{ANA}_{it} = \beta_0 + \beta_1 \mathrm{DT}_{it} + \sum_j \beta_j \mathrm{Controls} + \lambda_i + \mu_i + \varepsilon_{it} \tag{5}$$

$$\mathrm{Risk}_{it} = \beta_0 + \beta_1 \mathrm{DT}_{it} + \beta_2 \mathrm{ANA}_{it} + \sum_j \beta_j \mathrm{Controls} + \lambda_i + \mu_i + \varepsilon_{it} \tag{6}$$

Among them, Risk is the level of enterprise risk-taking, DT is the enterprise digital transformation, ANA is the analyst's attention, Controls is the set of enterprise-level control variables, and the industry and time fixed effects are the random error terms in the model.

4. Empirical Analysis

4.1. Descriptive Statistics

A descriptive statistical analysis of the variables in the model provides a visual understanding of the basic characteristics of the sample companies. Table 2 presents descriptive statistics for the main variables. As can be seen from the table, from 2014 to 2023, the minimum value of enterprise risk-bearing level (Risk) was 0 and the maximum value was 33.45, indicating that the level of enterprise risk-bearing was quite different in different enterprises; the average value was 3.348, the median was 1.96, and the average level of enterprise risk-bearing was higher than the median, indicating that listed companies in our country tended to bear certain risks and were more willing to choose high-risk investment projects; the average degree of enterprise digital transformation (DT) was 1.532, the standard deviation was 1.401, and the standard deviation was larger than the average, indicating that the overall digital transformation degree of the sample was low, which was consistent with the actual situation in China, and the degree of digital transformation of different enterprises showed certain differences. There are still some enterprises that have not yet started digital transformation. This data feature not only reflects the diversity of corporate strategic choices, but also provides an empirical basis for subsequent mechanism analysis.

Table 2: Descriptive statistics of major variables

variable	N	mean	sd	min	p50	max
Risk	32,255	3.348	4.380	0	1.96	33.45
DT	32,255	1.532	1.401	0	1.386	5.257
ANA	32,255	1.295	1.177	0	1.099	3.912
Size	32,255	22.24	1.295	19.57	22.04	26.45
Lev	32,255	0.415	0.204	0.0462	0.405	0.927
ROE	32,255	0.0537	0.139	-0.962	0.064	0.490
Age	32,255	2.951	0.310	1.792	2.996	3.611
Board	32,255	2.111	0.196	1.609	2.197	2.708
Growth	32,255	0.151	0.396	-0.648	0.084	3.894
Top1	32,255	33.69	14.71	7.856	31.33	75.46

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4.2. Regression results analysis

4.2.1. digital transformation and enterprise risk-taking level

Table 3 shows the regression results of the empirical test of hypothesis 1. Column (1) only controls individuals and years, and does not add control variables. The results show that the regression coefficient of digital transformation (DT) is 0.077, and it is significantly positively correlated at the 1% level. This result verifies that digital transformation has a significant promotion effect on the level of enterprise risk-taking, and preliminarily verifies hypothesis 1. The regression results of adding control variables on the basis of column (1) are shown in column (2). The coefficient of digital transformation (DT) is 0.448, and it is still significant at the 1% level. This result shows that improving the degree of digital transformation can significantly promote the level of enterprise risk-taking. Hypothesis 1 is verified.

Table 3: Regression results for hypothesis H1

	(1)	(2)
	Risk	Risk
DT	0.077***	0.059***
	(2.97)	(2.81)
Size		-0.352***
		(-15.03)
Lev		1.660***
		(11.71)
ROE		-9.960***
		(-56.26)
Age		0.899***
		(10.87)
Board		-0.692***
		(-4.65)
Growth		0.714***
		(11.90)
Top1		-0.019***
		(-11.87)
_cons	15.355***	11.765***
	(30.79)	(17.89)
N	32255	32255
R2	0.075	0.209
Ind	Yes	Yes
Year	Yes	Yes
Note:*p<10%, **p<5%, ***p<1%.		

4.2.2. Digital transformation, analyst attention and enterprise risk-taking level

In order to deeply analyze whether digital transformation plays a role in enterprise risk-taking level through analyst attention, this paper adopts stepwise regression method, and Table 4 is the regression result. Among them, column (1) reports that the regression coefficient of digital transformation (DT) on enterprise risk-taking level (Risk) is 0.059, and it is significant at the 1% level, which can continue to be tested. Column (2) is the result of the direct impact of digital transformation (DT) on analyst attention (ANA). The results show that the coefficient of digital transformation (DT) is 0.056, and the coefficient is greater than 0 and significant at the 1% level, indicating that there is a significant positive correlation between digital transformation and analyst attention; column (3) includes both the explanatory variable digital transformation (DT) and the intermediary variable analyst attention (ANA). The results show that the coefficient of digital transformation (DT) is 0.053, which is significant at the 5% level. The coefficient of analyst attention (ANA) is 0.107, which is significant at the 1% level. And the coefficient of digital transformation (DT) has decreased, proving that the intermediary effect is established, that is Analysts focus on playing a part mediating role in the relationship between digital transformation and risk-taking levels. Hypothesis 2 is validated.

Table 4: Regression results for hypothesis H2

	(1)	(2)	(3)
	Risk	ANA	Risk
DT	0.059***	0.056***	0.053**
	(2.81)	(11.18)	(2.52)

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ANA			0.107***
			(4.46)
Size	-0.352***	0.514***	-0.406***
	(-15.03)	(92.38)	(-15.39)
Lev	1.660***	-0.762***	1.741***
	(11.71)	(-22.59)	(12.18)
ROE	-9.960***	1.914***	-10.165***
	(-56.26)	(45.47)	(-55.60)
Age	0.899***	-0.355***	0.937***
	(10.87)	(-18.08)	(11.28)
Board	-0.692***	0.105***	-0.703***
	(-4.65)	(2.98)	(-4.73)
Growth	0.714***	0.113***	0.702***
	(11.90)	(7.96)	(11.69)
Top1	-0.019***	-0.002***	-0.019***
	(-11.87)	(-4.16)	(-11.77)
_cons	11.765***	-8.667***	12.689***
	(17.89)	(-55.42)	(18.41)
N	32255	32255	32255
R2	0.209	0.394	0.210
Ind	Yes	Yes	Yes
Year	Yes	Yes	Yes
Note:*p<10%, **p<5%, ***p<1%.			

5. Robustness test

5.1. Replacement of measures of explained variables

Based on the robustness test theory, this study firstly draws on the research design of He Weifeng et al. (2016)[30]and Huang Bo et al. (2022)[31], and uses the method of replacing the measurement method of the explained variables to conduct robustness test. Specifically, the calculation window of the original risk tolerance level (Risk) is adjusted from a 3-year rolling period to a 5-year rolling period (t-4 to t years), and a new risk tolerance index Risk1 is constructed. The relationship between digital transformation and Risk1 is re-examined through a fixed-effect model. The regression results are shown in column (1) (2) of Table 5. In column (1), only the control variables, uncontrolled individuals and years were added. The results showed that the coefficient of the explained variable Risk1 and the explained DT was 0.151, which was significantly positively correlated at the level of 1%. The regression results after adding the control variables on the basis of column (1) were shown in column (2). The regression coefficient of digital transformation (DT) was 0.046, and it was significant at the level of 5%. Compared with the previous regression results, the coefficient symbols were consistent with the significance level, which supported the null hypothesis and enhanced the reliability of the conclusion.

5.2. Individual fixed effect

In order to solve the endogenous problem of individual heterogeneity and omitted variables due to time invariance, this study adopted a two-way fixed effect model to deal with it. After controlling for individual and time effects, the regression results are shown in column (3) of Table 5. The regression coefficient of digital transformation (DT) is 0.069, and it is significant at the level of 1%. It still significantly positively affects the enterprise risk-bearing level (Risk), verifying the robustness of Hypothesis 1.

5.3. Eliminating samples that have not implemented digital transformation

This study refers to the sample screening method of Li Lei (2022), and retains the sample of enterprises with digital transformation greater than 0 for regression. Column (4) of Table 5 shows that the regression coefficient of digital transformation (DT) is 0.058, and it is significant at the level of 5%. It is consistent with the full-sample regression results, verifying the robustness of the research conclusions.

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Table 5: Robustness test

	(1)	(2)	(3)	(4)
	Risk1	Risk1	Risk	Risk
DT	0.151***	0.046**	0.069***	0.058**
	(9.46)	(2.28)	(3.25)	(2.04)
Size	0.870***	1.892***	1.965***	1.439***
	(6.61)	(13.95)	(13.99)	(8.33)
Lev	-8.630***	-8.025***	-9.530***	-10.700***
	(-49.57)	(-47.08)	(-54.16)	(-50.51)
ROE	1.508***	1.211***	0.964***	0.915***
	(20.50)	(15.44)	(11.91)	(9.43)
Age	-0.906***	-0.883***	-0.811***	-0.896***
	(-6.22)	(-6.17)	(-5.48)	(-5.03)
Board	0.764***	0.815***	0.754***	0.765***
	(13.19)	(14.31)	(12.85)	(10.59)
Growth	-0.206***	-0.252***	-0.260***	-0.122**
	(-4.07)	(-5.11)	(-5.12)	(-2.02)
Top1	-0.023***	-0.023***	-0.019***	-0.021***
	(-14.49)	(-14.43)	(-11.76)	(-10.72)
_cons	8.263***	12.567***	12.023***	11.010***
	(13.92)	(19.81)	(16.94)	(13.91)
N	32255	32255	32255	22726
R2	0.133	0.188	0.206	0.215
Ind	No	Yes	Yes	Yes
Year	No	Yes	Yes	Yes
Code	No	No	Yes	No
Note:*p<10%, **p<5%, ***p<1%.				

6. Further analysis

In order to further explore the impact of digital transformation and analysts' attention on the level of risk-taking of different enterprises, this paper classifies the heterogeneity of the full sample of enterprises according to the industry structure, and classifies them into high-tech enterprises and non-high-tech enterprises. First, as the core carrier of the national innovation system, high-tech enterprises assume strategic leadership functions in breaking through technical barriers, expanding international markets, and driving industrial upgrading, and continue to be in the forefront of technological change. The R & D activities of such enterprises have significant risk attributes, and their technological iteration process is accompanied by a high degree of uncertainty, which requires decision-makers to have both strong strategic foresight and risk tolerance. However, due to the fact that the long-term tracking coverage of high-tech enterprises by analysts has reached 87.4% (Wind, 2023), their information transparency is already at a high level, and the incremental information release space brought about by digital transformation is limited, resulting in the intermediary conduction elasticity coefficient that analysts pay attention to is not large. Secondly, the application of digital technology by high-tech enterprises is generally 3-5 years ahead of traditional industries (China Academy of Information and Communications Technology, 2023), and the technology first-mover advantage accumulated by their early transformation has entered the stage of diminishing returns. This leads to a flattening of the improvement effect of digitalization on the level of risk-taking. And when the digital maturity of enterprises is too high, the degree of reduction of analysts' tracking costs is not high, much lower than that of non-high-tech enterprises. This lack of marginal improvement has hindered the channel through which digital transformation can increase the level of risk-taking through analysts' attention. Finally, due to the institutional dividends formed by the policy tilt, the financing constraint index of high-tech enterprises is lower than that of traditional enterprises (Ministry of Finance, 2022). Although this advantage in resource acquisition can strengthen the momentum of innovation, it also weakens the marginal utility of digital technology for risk compensation. On the other hand, non-high-tech enterprises, due to the stronger information asymmetry and credit rationing constraints, their digital transformation has a more significant value in decision-making optimization by attracting analysts' attention. The governance improvement effect and resource unlocking effect have a more significant impact on the level of risk-taking.

In order to study industry heterogeneity, this paper uses dummy variables to describe the industry structure of enterprises. If it is a high-tech enterprise, the value is 1, if not, it is 0. The regression results

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are shown in Table 6. Columns (1) and (4) show that digital transformation (DT) has a significant positive impact on the level of enterprise risk in non-high-tech industries, but does not have a significant effect on high-tech industry enterprises; the results of columns (2) and (5) show that digital transformation can effectively improve analyst attention (ANA); the results of columns (3) and (6) show that in non-high-tech enterprises, the intensity of intermediary effects of analysts' attention is significantly higher than that of high-tech enterprises, but the impact on high-tech enterprises is not significant, and industry heterogeneity is established. The regression in Table 6 is carried out under the addition of control variables and the control of the combined fixed effect of provinces and years.

Table 6: Heterogeneity test of industry characteristics

	(1)	(2)	(3)	(4)	(5)	(6)
	High-tech			Non-high-tech		
	Risk	ANA	Risk	Risk	ANA	Risk
DT	0.047	0.046***	0.046	0.064*	0.072***	0.045*
	(1.56)	(7.03)	(1.52)	(1.87)	(8.37)	(1.31)
ANA			0.027			0.263***
			(0.76)			(6.91)
_cons	7.555*	-9.563***	7.810*	14.947***	-7.514***	16.923***
	(1.74)	(-10.01)	(1.79)	(15.40)	(-30.63)	(16.76)
Control	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes	Yes
N	16825	16825	16825	10829	10829	10829
R^2	0.185	0.371	0.185	0.246	0.394	0.249
Note:*p<10%, **p<5%, ***p<1%.						

7. Research conclusions, implications and shortcomings

In the context of the deep integration of the digital economy and the real economy, enterprise digital transformation expands a new dimension of enterprise value creation through technology empowerment. Based on the data of Shanghai and Shenzhen class A share listed companies from 2014 to 2023, this study systematically reveals the mechanism of digital transformation on the level of enterprise risk-taking. The conclusions are as follows: (1) digital transformation significantly improves the level of enterprise risk-taking through the triple transmission mechanism of optimizing information processing efficiency, alleviating agency conflicts, and broadening capital acquisition channels. This conclusion passes a series of robustness tests; (2) Analysts focus on playing a part of the intermediary role between digital transformation and risk-taking. Specifically, the digital transformation of enterprises attracts more analysts' attention by improving the quality of information disclosure and industry comparability, reducing the cost of analysts' tracking, and then attracting more analysts' attention; the improvement of analysts' attention will promote the improvement of enterprise risk-taking through the dual mechanism of information transmission and supervision and governance (Wu Wuqing et al., 2017 [29]). (3) The empirical finding of industry heterogeneity shows that compared with high-tech enterprises, analysts focus on the promotion of risk-taking by digital transformation in non-high-tech enterprises. This finding reveals the compensatory effect of digital technology on the shortcomings of traditional industrial governance.

The research findings have important policy implications: first, enterprises should recognize the importance of digital transformation and incorporate it into the core of their strategies, optimize the efficiency of capital acquisition, and respond quickly to external changes, so as to improve their ability to predict and respond to risks, enhance their competitiveness and risk-taking level, so as to promote high-quality sustainable development of enterprises. Second, enterprises should strengthen internal information exchange and external information disclosure governance by building intelligent financial systems and digital marketing platforms, improve the quality of information disclosure to attract the attention of analysts, and give play to the dual role mechanism of information transmission and supervision and governance that analysts pay attention to, so as to promote the level of enterprise risk-taking and enhance enterprise value. Third, non-high-tech enterprises should make full use of their own advantages, accelerate the process of digitalization, and use technology to empower them to break through resource constraints and governance bottlenecks. At the same time, make full use of analysts to provide information to improve the overall risk-bearing and management level. Fourth, the government should actively guide enterprises to carry out digital transformation and provide supporting infrastructure and policy support. For example, through tax incentives or special project funds,

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traditional industries can be guided to implement digital transformation to strengthen their risk-bearing level. Fifth, regulators need to improve the practice norms of analysts, encourage their in-depth tracking of digital transformation enterprises, and curb management's short-sighted behavior through market-oriented supervision mechanisms to promote long-term value investment.

Disadvantages of this paper: The sample time range up to 2023 fails to fully capture the long-term effects of digitalization acceleration in the post-epidemic era, and the observation period can be extended in the future to verify the time-varying characteristics of the conclusions; This study only reveals part of the intermediary utility of analysts' attention as an information intermediary mechanism, and has not systematically investigated other potential action paths. In addition, the relationship between digital transformation, analysts' attention and corporate risk-taking may have potential moderating effects. The interaction effects of exogenous variables such as institutional environment and management characteristics have not been systematically investigated, providing theoretical expansion space for future research.

References

[1] Qi Yudong, Xiao Xu. Enterprise management reform in the era of digital economy [J]. Management World, 2020, 36 (06): 135-152 + 250.

[2] Jing Wenjun, Sun Baowen. Digital economy promotes high-quality economic development: a theoretical analysis framework [J]. Economist, 2019, (02): 66-73.

[3] Wu Fei, Hu Huizhi, Lin Huiyan, et al. Enterprise digital transformation and capital markets performance - empirical evidence from stock liquidity [J]. Management World, 2021, 37 (07): 130-144 + 10.

[4] Chen Jian, Huang Shuo, Liu Yunhui. From empowering to enabling - enterprise operation management in a digital environment [J]. Management World, 2020, 36 (02): 117-128 + 222.

[5] Zhao Chenyu, Wang Wenchun, Li Xuesong. How digital transformation affects enterprise total factor productivity [J]. Financial and Trade Economics, 2021, 42 (07): 114-129.

[6] Yu Minggui, Li Wengui, Pan Hongbo. Managerial overconfidence and enterprise risk-taking [J]. Financial Research, 2013, (01): 149-163.

[7] Ma Lianfu, Du Shanzhong. Can digital finance improve the level of enterprise risk-taking [J]. Economist, 2021, (05): 65-74.

[8] Huang Dayu, Xie Huobao, Zou Mengting, et al. The impact of digital transformation on the level of enterprise risk-taking - mechanism and influence channel [J]. Science and Technology Progress and Countermeasures, 2023, 40 (11): 1-10.

[9] Hong H ,Lim T ,Stein C J .Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies[J].The Journal of Finance,2000,55(1):265-295.

[10] Healy M P ,Palepu G K .Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature[J].Journal of Accounting and Economics,2001,31(1):405-440.

[11] Chen S ,Matsumoto A D .Favorable versus Unfavorable Recommendations: The Impact on Analyst Access to Management-Provided Information[J].Journal of Accounting Research, 2006, 44(4):657-689.

[12] Zhai Huayun, Li Qianru. Does enterprise digital transformation improve audit quality? - An empirical test based on multi-time point double difference model [J]. Audit and Economic Research, 2022, 37 (02): 69-80.

[13] Tu Xinyu, Yan Xiaoling. Digital transformation, knowledge spillover and total factor productivity of enterprises - empirical evidence from listed manufacturing companies [J]. Industrial Economics Research, 2022, (02): 43-56.

[14] Qi Huaijin, Cao Xiuqin, Liu Yanxia. The impact of digital economy on corporate governance - based on the perspective of information asymmetry and managers' irrational behavior [J]. Reform, 2020, (04): 50-64.

[15] Wu Wuqing, Li Qiheng, Zhang Liuyi, et al. Public data resources and enterprise total factor productivity - a quasi-natural experiment based on local government data openness [J]. Systematic Engineering Theory and Practice, 2024, 44 (06): 1815-1833.

[16] Huang Dayu, Xie Huobao, Meng Xiangyu, et al. Digital transformation and enterprise value - empirical evidence based on text analysis methods [J]. Economist, 2021, (12): 41-51.

[17] Huang Yiping, Huang Zhuo. China's digital financial development: present and future [J]. Economics (Quarterly), 2018, 17 (04): 1489-1502.

[18] Fang Junxiong, Wu Qiong, Fu Qi. Limited attention, competitive information and market response

ISSN 2616-5902 Vol. 7, Issue 4: 113-123, DOI: 10.25236/AJBM.2025.070414

to analyst rating reports [J]. Financial Research, 2018, (07): 193-206.
[19] Liu Shaobo, Lu Manqian, Zhang Youze. Does digital transformation enhance the value of enterprise risk-taking? [J]. Journal of Capital University of Economics and Business, 2023, 25 (02): 61-80.
[20] Fang Junxiong. Information disclosure transparency of listed companies in our country and forecast by securities analysts [J]. Financial Research, 2007, (06): 136-148.
[21] Zhou Chen, Peng Lida, Han Fei. Research on the impact of analyst attention on enterprise risk-taking [J]. Friends of Accounting, 2023, (07): 26-32.
[22] Liu Yaoyao, Lu Junwei. Forward-looking information disclosure and analyst earnings forecasting - evidence based on text analysis and machine learning [J]. Foreign Economics and Management, 2023, 45 (10): 101-115.
[23] He Ying, Yu Wenlei, Yang Mianzhi. CEO compound career experience, corporate risk-taking and corporate value [J]. China Industrial Economy, 2019, (09): 155-173.
[24] Song Jianbo, Wen Wen, Wang Dehong. Can returnee executives promote corporate risk-taking - empirical evidence from Chinese class A share listed companies [J]. Financial and Trade Economics, 2017, 38 (12): 111-126.
[25] Xiao Tusheng, Sun Ruiqi, Yuan Chun, et al. Enterprise digital transformation, human capital restructuring and labor income share [J]. Management World, 2022, 38 (12): 220-237.
[26] Pan Yue, Dai Yiyi, Lin Chaoqun. Information opacity, analyst attention and the risk of individual stock slump [J]. Financial Research, 2011, (09): 138-151.
[27] Chen Qinyuan, Ma Lijun, Yi Zhihong. Analyst tracking and corporate innovation performance - China's logic [J]. Nankai University Management Review, 2017, 20 (03): 15-27.
[28] Hu Jie, Han Yiming, Zhong Yong. How corporate digital transformation affects corporate ESG performance - evidence from Chinese listed companies [J]. Industrial Economic Review, 2023, (01): 105-123.
[29] Wu Wuqing, Jie Muxiao, Su Zihao. Information opacity, deep tracking analysts and market response [J]. Management Review, 2017, 29 (11): 171-182 + 195.
[30] He Weifeng, Liu Wei, Huang Kaili. Managerial competence and corporate risk-taking [J]. China Soft Science, 2016, (05): 107-118.
[31] Huang Bo, Cheng Xiaomeng, Li Haitong. Remote Chamber of Commerce and Enterprise Risk-taking - An Empirical Study Based on Listed Companies [J]. Economic Theory and Economic Management, 2022, 42 (02): 67-83