

The impact of emerging market media coverage on corporate innovation investment: evidence from China

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Abstract

Along with the acceleration of the process of innovation investment in recent years, emerging market media coverage has been utilized by companies to enhance their competitiveness. The study conducts a theoretical analysis and an empirical test of the relationship between media reports and innovation investment, as well as the impact of media reporting attitude and reporting source on corporate innovation, using panel data for the period 2010-2021 for A-share-listed companies in Shanghai and Shenzhen, China. These findings show that media reports are influenced by media emotions, which can promote corporate investment in innovation, mainly in non-state-owned enterprises. They also have implications for enterprises and governments, who can leverage the media and public opinion to align with long-term interests and promote the positive development of enterprises.

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Keywords: Media coverage, Corporate innovation investment, Media reports, Innovation performance, Media emotions

1. Introduction

Innovation investment is an important prerequisite and a basic guarantee for an enterprise's ability to produce innovative results. Scholars have pointed out that internal and external factors of enterprises will affect corporate innovation investment, among which internal factors include technical directors [1], [2], stock options [3], [4], and digital transformation [5], [6]. Among external factors, scholars concentrate on the transparency of the information environment [7], [8], government subsidies, and other industrial policies [7], [9].

Driven by the development of informatization, the power of the media has unconsciously permeated all levels of society. As one of the external environments for enterprises, the media also has an impact on corporate behavior. For example, the media plays the role of transmitting information and supervising governance in the capital market [10], [11]. Existing literature has confirmed the role of media as information intermediaries. In addition to organizing and disseminating the collected information [12], [13], It will also create new information to help the audience make decisions [12], [14]. Some scholars have examined the relationship between the media and corporate innovation behavior, but have done little research on the impact of media reports on such behavior. For instance, Dai et al. [15] found that media coverage will negatively affect the number of corporate patents, mainly due to short-term market pressure exerted by the media on managers. There are three types of

media reports: positive, neutral, and negative. When exploring the impact of media reports on corporate innovation investment, we have to consider their valence. From the beginning, the media was just a porter that objectively conveyed information, and gradually developed into a subject that can express opinions and release emotions. Emotions are contagious [16], [17], media emotions are easily spread quickly and widely in the capital market, which has a certain impact on the capital market and its participants [18], [19]. Scholars have pointed out that different types of media emotions have an impact on the rise and fall of stock prices, corporate strategic behaviors, etc [19], [20]. As such, most existing studies focus on negative media reports and ignore the role of positive reports. The positive emotions conveyed by positive media reports will keep individuals and organizations in a positive mindset, produce stronger creativity and induce more positive behaviors [21], [22]. Therefore, this study will focus on the differential impact of positive and negative media reports on corporate innovative behavior.

Information sources affect persuasiveness. Media reports can be original or reprinted. Media reports from different sources may have different impacts on corporate innovation investment. In general, first media outlets have strict review standards for the authenticity, accuracy, completeness and legality of original reporting content. The requirements for reprinting reports are relatively fewer and the difficulty of forwarding is also lower. For the audience, original reports are more authoritative than reprinted reports. Therefore, this article will also focus on the differential impact of original reports and reprinted reports on corporate innovation investment. China provides a particularly important setting for examining the relationship between media coverage and corporate innovation investment because its capital market combines market-oriented competition with strong state involvement. Prior research has shown that, compared with developed Western markets, China operates under a relatively weaker formal legal and financial system, while state ownership remains pervasive and major financial resources are still significantly influenced by the government [23]. At the same time, the information environment of Chinese listed firms is comparatively less transparent, and disclosure quality varies substantially across firms, making external information intermediaries such as the media especially important for reducing information asymmetry and shaping market perceptions [24]. More importantly, state-owned enterprises in China are not purely profit-oriented business organizations. They are embedded in a Party-dominated governance structure characterized by Party leadership, state ownership, cadre management, and Party participation in major corporate decisions, and they often need to accommodate broader political and social objectives in addition to commercial performance [25]. Therefore, the Chinese context offers a distinctive institutional setting in which media coverage may affect corporate innovation investment not only through information transmission and market discipline, but also through its interaction with state control, heterogeneous governance structures, and different degrees of managerial autonomy across firms.

In addition, this study will also explore the moderating role of ownership with Chinese characteristics and corporate technology certification in the relationship between media coverage and corporate innovation investment. In China's capital market, listed companies are divided into state-owned and private enterprises based on their corporate ownership. The power to appoint senior executives of state-owned enterprises rests with the government, which also shoulders many policy tasks. Executives of private enterprises are supervised by shareholders and pursue high profits and the maximization of corporate value as their goals.

For these two types of companies, what role does corporate ownership play in the relationship between media coverage and investment in corporate innovation? Based on the degree of technological development, the Chinese government classifies enterprises into high-tech and non-high-tech, and issues official "certification qualifications" to high-tech enterprises. Compared with non-high-tech enterprises, high-tech enterprises have a higher starting point in technological innovation, a solid foundation, and conduct innovative R&D more quickly and frequently. So, compared with non-high-tech enterprises, what impact will high-tech enterprises with official government certification have on their innovative investment behavior in the face of media reports?

In summary, this study will focus on media reporting as an external environmental factor for enterprises, explore its impact on corporate innovation investment, and examine the impact of media reporting attitude (positive vs.

negative) and reporting source (original vs. reprinted) on corporate innovation. The differential impact of investment also focuses on the moderating effects of enterprises' property rights attributes and their high-tech certification on the relationship between media reports and enterprise innovation investment in the Chinese context.

This study makes four main contributions to the literature. First, it extends the research on media governance and corporate innovation by examining how media coverage affects corporate innovation investment, rather than innovation output or other corporate outcomes, in the context of an emerging market. Second, this study moves beyond treating media coverage as a homogeneous external force by distinguishing the effects of report valence (positive, neutral, and negative) and report source (original versus reprinted), thereby providing a more fine-grained understanding of how different forms of media attention shape firms' innovation decisions. Third, by focusing on China, this paper incorporates institutional heterogeneity into the analysis and examines whether the effect of media coverage varies across firms with different ownership structures and technology attributes, thus enriching the literature on media effects under distinctive governance arrangements. Finally, using panel data on Chinese A-share listed firms from 2010 to 2021, this study offers large-sample evidence from an important emerging economy and provides robust empirical support for understanding the role of media coverage in shaping long-term corporate strategic investment decisions.

2. Literature review and hypotheses

Innovation is a business activity with high risks, a long cycle, and uncertain returns [26], [27], and its importance to economic development is self-evident. The high failure rate of innovation investment makes the road to research and development difficult. However, the media has an information function, and media reports can solve the problem of information asymmetry inside and outside the enterprise to a certain extent [28]. The media conveys the company's basic information to the capital market [29], brings the helmsman of the enterprise, the senior management team, from behind the scenes to the stage, increasing the credibility of the management [30], can allow various social groups and the public to better understand the enterprise.

Media reports play a supervisory and governance function through administrative intervention mechanisms, market pressure mechanisms and reputation mechanisms [31]. First, media attention can lead to government intervention and promote the reform or implementation of company laws. Second, media coverage will affect investors' assessment of corporate value, thereby forcing managers to improve governance in order to stabilize the company's market position. Third, media exposure will also make managers pay attention to their personal image in front of the public and therefore constrain their own behavior [32]. The media improves the information environment inside and outside the enterprise, reduces information asymmetry, promotes information fairness, reduces enterprises' financing costs, alleviates the financing constraints of innovative funds to a certain extent, and increases the number of enterprises, thereby increasing their investment. Possibility of innovative investment. In addition, the media can play supervisory and governance roles through administrative intervention and reputational mechanisms, address managers' moral hazard, encourage management to pay more attention to the long-term development of enterprises, and enhance the intensity and depth of innovative activities. Therefore, this paper proposes the following hypotheses:

Hypothesis 1: Media coverage can promote companies to increase investment in innovation.

The media is not completely objective and neutral. The content of the reports will present an optimistic or pessimistic attitude towards a certain company. These views reflect different media sentiments. According to the theory of emotional contagion, emotions conveyed by media reports may affect the macroeconomy, capital markets, or media audiences' emotions [33]. Existing research focuses primarily on the supervisory role of negative media reports on enterprises, but this article argues that the potential governance role of positive media reports should not be overlooked. As early as the 1980s, some scholars pointed out that positive emotions help people find solutions to problems more easily [34]. Positive emotions facilitate the smooth progress of multiple goals and guide executives to seize unexpected opportunities in a timely manner [35]. There is abundant research

indicating that the positive emotions conveyed by positive media reports may lead to more creative behaviors. For example, Barbara Fredrickson first proposed and developed the expansion-construction theory of positive emotions [36]. Fredrickson believes that positive emotions can expand an individual's scope of thinking and action, thereby building lasting personal resources [37] and promoting individuals to generate more valuable creative thinking and put it into action [36]. Research by other scholars has also confirmed the significance of positive emotions on individual creativity [21]. According to the theory of emotional contagion, emotions interact among individuals to form and shape group emotions. Positive media coverage of a company conveys a positive emotion, which can help team members learn from each other, improve cooperation, encourage new ideas, and enhance organizational creativity [38]. Studies have shown that the impact of positive emotions on individuals also extends to group emotions. Since organizations are composed of individuals and, given the positive impact of positive reports on individuals, this study posits that positive reports will also play a positive role in promoting corporate innovation activities. The media's positive coverage of a company can spread positive emotions directly to the company, or through capital market participants. Whether it is used by the management team or transmitted within the R&D project team, it can promote the company's innovation decision-making and decision-making. implementation. This article proposes hypothesis 2:

Hypothesis 2: The promotion effect of media reports on corporate innovation investment is stronger under positive reports.

Media bias exists in media reporting, referring to the media concealing relevant facts in reports, making partial or partial generalizations, and using tendentious language [39]. This bias may come from journalists' own preferences to promote their own views, or it may come from the media's pandering to the reporting audience and government politicians [40]. Regarding the financial media's reporting on mergers and acquisitions rumors from 2000 to 2011, Ahern and Sosyura [41] believes that the media tend to report rumors about newsworthy companies with a wide audience, and the research results are not limited to rumors in the field of mergers and acquisitions. Gurun and Butler [42] found that the media used fewer negative words when reporting on local companies. The media has local bias, and this tendency will affect the investment decisions of local investors. When studying media bias, it was also pointed out that when the reporting audience has a real source of information, the media needs to bear the risk of damaging [40].

As an active part of the capital market, the media also pays great attention to its own reputation, which is an important credit resource. If media reports lack objectivity and authenticity over time, it will not only reduce their credibility in the market but also further undermine performance. The negative impact is difficult to estimate. The difficulty of publishing original reports and the review standards reflect the strict requirements of the publishing media for reporting. This also reflects, to a certain extent, that the media attaches great importance to its reputation and does not want to bear the economic and legal consequences of publishing false reports. Reprinted reports are less difficult to publish and have lower review standards than original reports. This paper believes that original reports are more effective in exerting the effect of corporate innovation investment governance, so the following hypothesis is put forward:

Hypothesis 3: The promotion effect of media reports on corporate innovation investment is stronger under original reports.

State-owned enterprises, which are funded by the Chinese state and the government, perform the responsibilities of investors and are the backbone of China's current economic development. However, administrative bureaucracy is common in state-owned enterprises, and their managers are mostly appointed by the central or local governments. State-owned enterprise executives are responsible to the government, and their salary assessment indicators are not only related to performance, but also include many policy tasks [1]. In this environment, compared with non-state-owned enterprises, state-owned enterprises face additional expectations beyond performance, which weakens their autonomy to some extent. The cost of innovation becomes higher, and R&D positivity is suppressed. In addition, the "relationship culture" is deeply rooted in Chinese society, and managers of state-owned enterprises can rely on their administrative power to achieve performance.

Executives of state-owned enterprises will also focus on the enterprise's internal and external relationship network, which naturally reduces the emphasis on innovation activities. Therefore, the noise affecting the innovative decisions of state-owned enterprise executives will be greater, and the media may not be able to fully exert its governance effect. The management of non-state-owned enterprises is appointed by the company's board of directors and is responsible to all shareholders. The goal is to maximize corporate value and shareholder wealth. Their compensation is deeply tied to the company's performance. Successful innovation projects can enhance the company's core competitiveness, increase its long-term value, and make the stock price more likely to rise, thereby increasing the equity value of shareholders and stock-holding executives. Compared with state-owned enterprises, non-state-owned enterprises have narrower financing channels. Media reports can alleviate the information asymmetry problem for such enterprises, improve the information environment and reduce financing difficulties, and can also, to a certain extent, inhibit managers of non-state-owned enterprises from pursuing personal gain or failing to be diligent and responsible. And then abandon the behavioral tendency of innovative projects. Therefore, this article proposes hypothesis 4:

Hypothesis 4: The promotion effect of media reports on corporate innovation investment is stronger among non-state-owned enterprises.

In an atmosphere where enterprises' scientific and technological innovation capabilities are increasingly valued, high-tech enterprises, as the main body of enterprise innovation, have been at the forefront of innovation. Technological innovation is the basis for the survival of high-tech enterprises. The qualification of high-tech enterprises is based on their strong innovation capabilities and continuous innovation vitality. The products they produce have core research and development competitiveness and can better meet the market's demand for innovation needs. Non-high-tech enterprises may not transfer all their production capabilities to research and development. The high risks and uncertain returns of innovation limit non-high-tech enterprises' willingness to innovate. The governance models of high-tech enterprises and non-high-tech enterprises often exhibit "incentive" characteristics dominated by executives and "supervisory" characteristics dominated by shareholders [40], [43]. High-tech enterprises have certain recognition conditions and preferential policies. Media reports on enterprises with high-tech titles also send certain signals to the market. Enterprises recognized by the government have stronger innovation advantages. The transmission of this signal makes high-tech enterprises more active. Technology companies have unique resource endowments in acquiring and integrating various resources, which enhances the activity of innovative behaviors and increases the possibility of successful R&D. Figure 1 illustrates a model of the impact of media reports on corporate innovation. Based on the virtuous cycle of high-tech enterprises in innovation and R&D, this paper proposes hypothesis 5 as follows:

Hypothesis 5: The promotion effect of media reports on corporate innovation investment is stronger among high-tech enterprises.

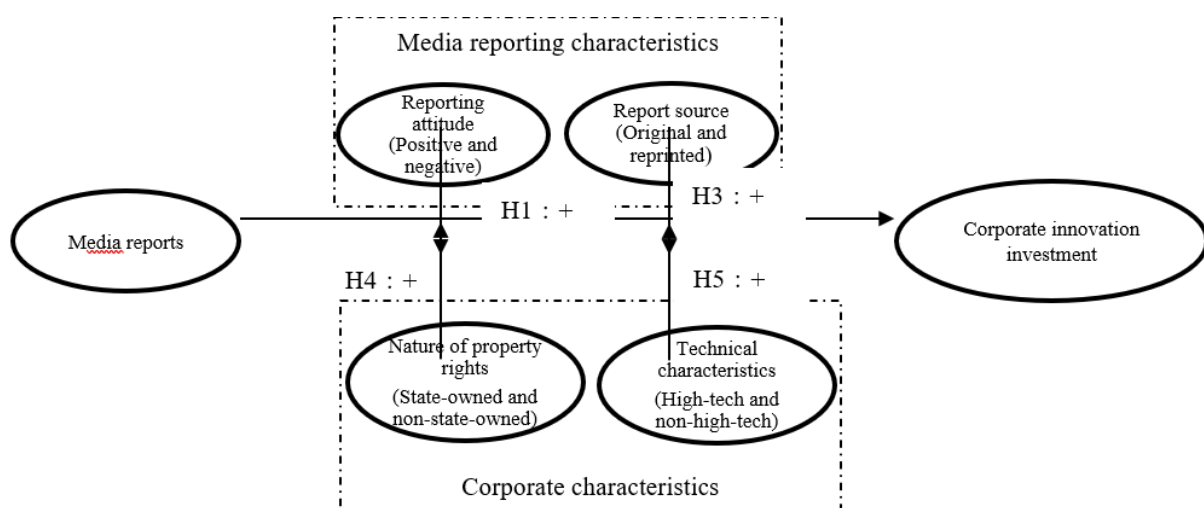


Figure 2. Model of the impact of media reports on corporate innovation

3. Research methodology

3.1. Sample selection and data sources

This paper uses all A-share-listed companies from 2010 to 2021 as a dataset to explore the impact of media reports on corporate innovation. The media reporting data for listed companies used in this paper are sourced from the CNRDS database (China Research Data Service Platform). Newspaper and online report data with different attitudes are obtained by sorting out the data. The remaining company-level data comes from the CSMAR database.

This paper screens the samples in the following order: ① Considering that financial companies rarely carry out innovative activities, this paper excludes financial listed companies; ② Due to abnormal data of ST companies, the data of companies on the Science and Technology Innovation Board is seriously missing and does not meet the data continuity conditions, excluding ST and science and technology listed companies; ③ Eliminate samples with one or more missing variables. Based on the above screening principles, this paper obtained a total of 25,773 observations from 3,513 listed companies in 11 years. Before conducting empirical analysis, this paper performs winnowing processing on all continuous variables at the 1% level to eliminate the influence of outliers.

3.2. Variable explanation

3.2.1. Explanatory variables

Corporate innovation investment (RD). Enterprise innovation activities primarily comprise innovation inputs and outputs. This paper focuses on the impact of innovation investment, so the annual R&D investment amount of listed companies is used as a measure of innovation [44]. The natural logarithm form is used in the regression analysis.

Regarding the media reporting level of listed companies, existing literature mainly reflects the company's news reporting level by counting newspaper reports or by using Internet news search engines to retrieve all news on the Internet and counting company news retrieval entries. In today's era of advanced information, the number of online news reports is huge, while the actual coverage of print newspaper reports is very limited. It is no longer the first-choice channel for the public to understand the world. This article examines the total number of newspaper and online news reports and performs regression analysis on them.

The "Financial News" company feature database in CNRDS is divided into a newspaper financial news database and an online financial news database. The media report variables are processed as follows in this article: First, the average number of companies mentioned in a report is calculated. If a report mentions that the number of companies exceeds the mean, then the information and opinions conveyed are not exclusive and do not meet the requirements for independent variable data in the empirical research of this article. Therefore, news items that mention the number of companies exceeding the sample mean will be eliminated; secondly, the deleted items The samples were summed, sentiment and source classified, namely the total number of media reports, the number of positive reports, the number of negative reports, the number of neutral reports, the number of original reports, and the number of reprinted reports, and their natural logarithms were used in regression analysis.

3.2.2. Control variables

Referring to previous research results [1], [15], [45], [46], [47], this study selected a series of factors considered to affect innovation variables, which are used as control variables: profitability level (ROA) [15], enterprise size (SIZE) [15], enterprise asset-liability ratio (LEV) [15], cash holding level (CASH) [46], growth rate (GROWTH) [47], investment opportunities (TOBINQ) [15], ownership concentration (TOP) [47], nature of property rights (SOE) [47], two jobs in one (DUAL) [1], technology type (HIGHTECH) [45], establishment time (AGE) [15]. The definitions of the variables above are provided in Table 1.

3.3. Model construction

In order to examine the impact of media reports on corporate innovation investment, this study constructed model (1):

$$RD_{i,t} = \beta_0 + \beta_1 MEDIA_{i,t} + \beta Controls_{i,t} + \sum Year + \sum Ind + \varepsilon_{i,t} \quad (1)$$

Among them, RD is the enterprise's R&D investment, Media is the number of media reports, Controls represents the control variable, ε is the random disturbance term, and the subscript t represents the year. β_1 is used to analyze the impact of media reports on corporate innovation investment. If the empirical result β_1 is significantly positive, each hypothesis is supported.

Table 1. Variable definition and brief description

Variable type	Variable name	Variable symbol	Variable measurement
Dependent variable	Enterprise innovation investment	RD	The natural logarithm of corporate R&D investment
	Media reports	MEDIA _{all}	The natural logarithm of the sum of the number of newspaper and online media reports
Independent variable	Positive media coverage	MEDIA _{pos}	The natural logarithm of the sum of positive reports in newspapers and online media
	Original media reports	MEDIA _{ori}	The natural logarithm of the sum of the number of original reports in newspapers and online media
	Profitability level	ROA	Net profit/total assets
Control variable	Enterprise size	SIZE	The natural logarithm of the total assets of the enterprise at the end of the period
	Corporate liabilities	LEV	Enterprise debt-to-asset ratio
	Cash holdings level	CASH	Closing balance of cash and cash equivalents/net assets
	Growth rate	GROWTH	(Annual operating income - operating income of the previous year) / operating income of the previous year
	Investment opportunities	TOBINQ	Market capitalization/total assets
	Ownership concentration	TOP	Shareholding ratio of the company's largest shareholder
	Nature of property rights	SOE	When the final controller of the company is the state, the value is 1, otherwise it is 0.
	Two jobs in one	DUAL	When the two positions of chairman and general manager are combined into one, it takes 1, otherwise it takes 0.
	Technology type	HIGHTECH	High-tech enterprises take the value of 1, otherwise it takes the value of 0.
	Established	AGE	The natural logarithm of the age of the company
	Years	Year	Annual control variables
	Industry	Ind	Industry control variables

4. Results

4.1. Descriptive statistics

The standard deviation of media reports is 0.962, indicating that differences in media attention across companies are not large and that balanced reporting is largely achieved. The mean value of the property rights variable is 0.297, indicating that the proportion of Chinese-owned enterprises in the sample is 29.7%. High-tech enterprises accounted for 52.7% of the sample. There is a positive correlation between media reports and corporate innovation investment at the 1% significance level, suggesting that media reports may promote corporate innovation investment.

4.2. Regression results

This study uses a panel data structure spanning 12 fiscal years and includes industry and year dummy variables to control for industry and year effects. To control for individual effects and minimize bias from omitted variables, this article uses multidimensional panel fixed effects in the regression analysis. Table 2 lists the impact of the total number of media reports on corporate innovation. Models (1) and (2) respectively use a random effect model and a fixed effect model that control for year and industry variables without considering control variables. Model (3) includes control variables and uses the regression results from a multidimensional panel fixed-effects model. The impact of the explanatory variables on the explained variables in the three models is consistent.

From the results of model (3) in Table 2, we can see that the explanatory variable media coverage MEDIA has a positive regression coefficient at the 5% significance level. Hypothesis 1 is supported: media coverage can prompt enterprises to increase innovation investment.

Table 2. Regression results of media reports on corporate innovation investment

	(1)	(2)	(3)
MEDIA _{all}	0.390*** (41.732)	0.117*** (14.190)	0.021** (2.328)
ROA			0.375 (1.671)
SIZE			0.748*** (23.100)
LEV			-0.323** (-2.756)
CASH			-0.019 (-0.287)
GROWTH			0.039** (2.681)
TOBINQ			0.015** (2.576)
TOP			-0.000 (-0.120)
SOE			-0.062 (-1.266)
DUAL			-0.002 (-0.125)
HIGHTECH			0.075*** (4.203)
AGE			-0.503**

	(1)	(2)	(3)
			(-2.700)
Constant	15.890*** (341.398)	15.838*** (98.177)	2.662** (2.719)
Year	No	Control	Control
Industry	No	Control	Control
R ²	0.061	0.402	0.883
N	26,961	26,961	25,773

Note: ***, **, and * indicate significant correlations at the 1%, 5%, and 10% statistical levels, respectively; t-values are in parentheses.

To test Hypothesis 2, this article conducts a group regression analysis of media reports. Models (1), (2), and (3) in Table 3 use positive, neutral, and negative reports, respectively, in place of the total number of media reports to test their impact on corporate innovation investment. According to model (1), positive media coverage is positively associated with corporate innovation investment, with both economic and statistical significance. In models (2) and (3), neutral and negative media reports did not statistically significantly promote corporate innovation investment. Hypothesis 2 was supported, that is, the promotion effect of media reports on corporate innovation investment was greater under powerful positive reports.

Table 3. Regression results of positive, neutral, and negative media reports on corporate innovation investment

	(1)	(2)	(3)
	POS	NEU	NEG
MEDIA	0.037*** (3.793)	0.011 (1.393)	0.012 (1.347)
ROA	0.434* (1.947)	0.458* (1.967)	0.471 (1.789)
SIZE	0.729*** (23.155)	0.747*** (22.556)	0.745*** (24.409)
LEV	-0.312** (-2.744)	-0.324** (-2.654)	-0.328** (-2.695)
CASH	-0.023 (-0.328)	-0.035 (-0.542)	-0.025 (-0.372)
GROWTH	0.037** (2.826)	0.043*** (3.571)	0.038*** (3.199)
TOBINQ	0.015* (2.171)	0.018** (3.011)	0.017** (2.502)
TOP	0.000 (0.178)	-0.000 (-0.003)	-0.000 (-0.015)
SOE	-0.051 (-0.994)	-0.081 (-1.630)	-0.063 (-1.157)
DUAL	-0.006 (-0.339)	0.000 (0.006)	-0.001 (-0.045)
HIGHTECH	0.078*** (4.358)	0.075*** (4.033)	0.079*** (4.690)
AGE	-0.416** (-2.363)	-0.465** (-2.632)	-0.423** (-2.314)

	(1)	(2)	(3)
Constant	2.741** (2.846)	2.612** (2.675)	2.491** (2.623)
Year	Control	Control	Control
Industry	Control	Control	Control
R ²	0.885	0.886	0.886
N	24,010	23,253	19, 798

Note: ***, **, and * indicate significant correlations at the 1%, 5%, and 10% statistical levels, respectively; t-values are in parentheses.

The regression results for original and reprinted media reports on corporate innovation are shown in Table 4. In model (1), the positive correlation between original reporting and corporate innovation investment is statistically significant. Hypothesis 3 is supported: the promotional effect of media reporting on corporate innovation investment is stronger under original reporting.

Table 4. Regression results of original and reprinted media reports on corporate innovation investment

	(1)	(2)
	ORI	Non-ORI
MEDIA	0.040** (2.769)	0.006 (0.759)
ROA	0.370 (1.651)	0.376 (1.673)
SIZE	0.743*** (23.050)	0.752*** (22.971)
LEV	-0.322** (-2.773)	-0.319** (-2.731)
CASH	-0.018 (-0.275)	-0.018 (-0.280)
GROWTH	0.039** (2.670)	0.040** (2.744)
TOBINQ	0.014** (2.250)	0.017** (2.965)
TOP	-0.000 (-0.106)	-0.000 (-0.138)
SOE	-0.062 (-1.268)	-0.064 (-1.298)
DUAL	-0.002 (-0.132)	-0.002 (-0.108)
HIGHTECH	0.075*** (4.180)	0.075*** (4.212)
AGE	-0.498** (-2.685)	-0.505** (-2.706)
Constant	2.689** (2.745)	2.655** (2.717)

	(1)	(2)
Year	Control	Control
Industry	Control	Control
R ²	0.883	0.883
N	25,765	25,765

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively; the t values are in parentheses.

This paper also performs group regression on property rights, and the results are shown in Appendix 1. Model (1) shows that media coverage of the non-state-owned enterprise group is positively correlated with corporate innovation investment, whereas the relationship between media coverage and innovation investment in the state-owned enterprise group is not significant (see model (2)). Hypothesis 4 is supported: media coverage has an impact on corporate innovation investment. The promotional effect of corporate innovation investment is stronger among non-state-owned enterprises.

To better compare the relationship between media reports and corporate innovation investment under different property-rights regimes, this article uses the Fisher combination test method based on bootstrap (with repeated sampling set to 2000 times) to conduct group-wise coefficient difference analysis. The regression results show the p-value is 0.000, which is significant at the 1% level. Therefore, the promotional effect of non-state-owned media reports on corporate innovation investment is more obvious.

The results of regression analysis after grouping enterprise technology types are shown in models (3) and (4) in Appendix 1. Model (4) shows the impact of the total number of media reports on the innovation investment of high-tech enterprises. Media reports significantly increase the innovation investment of high-tech enterprises. However, based on the data in model (3), it can also be concluded that media coverage is significantly and positively related to the innovation investment of non-high-tech enterprises, and that the media's governance effect plays its due role in non-high-tech enterprises. To compare the relationship between media reports and corporate innovation investment across different technology types, this article also conducted a coefficient difference analysis between groups. The regression results showed that the p-value was not significant, and hypothesis 5 was not supported.

Although media reports significantly increase corporate innovation investment in high-tech enterprises, they also significantly increase corporate innovation investment in non-high-tech enterprises, and the difference in coefficients between the two groups is not statistically significant. This result indicates that the governance effect of media reports in China is not exclusive to enterprises with official high-tech certification. One possible explanation is that high-tech enterprises already enjoy relatively strong innovation foundations, policy preferences, and resource advantages, which may weaken the marginal effect of additional media attention [48]. At the same time, non-high-tech enterprises are also exposed to substantial market and institutional pressures, including technological upgrading, competitive pressure, and the need to send positive signals to investors and other stakeholders [49]. In such an environment, media reports can still function through administrative intervention, market pressure, and reputation mechanisms, prompting non-high-tech enterprises to increase their corporate innovation investment. Therefore, in the Chinese context, high-tech certification does not generate a sufficiently sharp difference in the media-innovation relationship, which explains why Hypothesis 5 is not empirically supported.

4.3. Robustness check

Given that enterprise development and innovation themselves attract media attention for reporting, to address the endogeneity problem, this paper applies a T+N-period treatment to the basic model. It can also verify whether media reports can continue to play a role for a relatively long period. The regression results in Tables 5, 6, and Appendix 2 show that the total number of media reports, positive reports, and original reports not only stimulate the growth of innovation investment in the current period but also sustain their governance effects for

at least three years. As for the relationship between media coverage and corporate innovation investment in non-state-owned enterprises, the same conclusion was reached.

This paper also uses innovation intensity, that is, the ratio of corporate R&D investment to total assets, as an alternative measurement method for innovation indicators, and performs regression analysis. Since the variables have upper and lower bounds of 1 and 0, this article also uses the Tobit model for regression. The results after changing the innovation input measurement index and regression model are shown in Appendices 3, 4, 5, and 6. The total number of media reports, positive reports, and original reports still significantly stimulates the innovation intensity of enterprises. One explainable reason for the smaller coefficient may be that corporate R&D data is scaled in proportion to corporate total asset data. After using the tobit model for regression, the total number of media reports, positive reports, and original reports also maintains a positive relationship with innovation intensity. After regressing enterprises into groups according to the nature of their property rights, the above conclusion still holds.

Table 5. Regression results of the total number of media reports on corporate innovation investment: T+N period

	(1)	(2)	(3)
	T+1	T+2	T+3
MEDIA _{all}	0.029** (2.764)	0.034** (2.324)	0.038** (2.673)
ROA	1.035*** (4.742)	1.312*** (7.836)	1.437*** (5.841)
SIZE	0.653*** (17.295)	0.445*** (6.527)	0.202** (2.811)
LEV	-0.352** (-2.971)	-0.269* (-1.961)	-0.199 (-1.339)
CASH	0.025 (0.372)	0.088 (1.269)	0.103 (1.485)
GROWTH	0.114*** (6.579)	0.082*** (3.617)	0.081** (2.890)
TOBINQ	0.034*** (7.114)	0.044*** (5.295)	0.031** (2.902)
TOP	-0.000 (-0.307)	-0.000 (-0.117)	0.002 (1.333)
SOE	0.008 (0.142)	-0.011 (-0.258)	0.078 (1.289)
DUAL	0.026 (1.361)	0.022 (1.129)	0.031 (1.394)
HIGHTECH	0.069*** (7.095)	0.056*** (3.824)	0.047*** (3.485)
AGE	-0.219 (-1.251)	0.055 (0.294)	0.241 (1.162)
Constant	4.000*** (3.994)	7.857*** (5.763)	12.656*** (8.062)
Year	Control	Control	Control

	(1)	(2)	(3)
Industry	Control	Control	Control
R ²	0.897	0.896	0.897
N	20,476	17,676	14,818

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively; the t values are in parentheses.

Table 6. Regression results of positive and original media reports on corporate innovation investment: T+N period

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	POS			ORI			
	T+1	T+2	T+3	T+1	T+2	T+3	T+4
MEDIA	0.043*** (3.588)	0.040** (2.911)	0.050** (3.078)	0.054*** (3.495)	0.048** (2.763)	0.058*** (3.604)	0.041* (2.158)
ROA	1.113*** (4.791)	1.286*** (8.287)	1.344*** (5.100)	1.024*** (4.726)	1.309*** (7.773)	1.419*** (5.746)	0.943** (3.021)
SIZE	0.618*** (17.005)	0.419*** (6.376)	0.174** (2.526)	0.646*** (17.316)	0.441*** (6.506)	0.197** (2.711)	-0.007 (-0.107)
LEV	-0.327** (-2.680)	-0.207 (-1.533)	-0.166 (-1.064)	-0.352** (-2.980)	-0.268* (-1.953)	-0.200 (-1.330)	-0.088 (-0.553)
CASH	0.038 (0.513)	0.108 (1.500)	0.097 (1.505)	0.027 (0.398)	0.090 (1.317)	0.104 (1.512)	0.148 (1.888)
GROWTH	0.102*** (5.744)	0.082*** (3.844)	0.076** (2.435)	0.115*** (6.655)	0.082*** (3.704)	0.082** (2.963)	0.050 (1.683)
TOBINQ	0.034*** (6.567)	0.047*** (5.403)	0.027* (2.008)	0.033*** (6.829)	0.044*** (5.604)	0.031** (2.916)	0.012 (1.005)
TOP	-0.001 (-0.372)	-0.001 (-0.511)	0.002 (0.948)	-0.000 (-0.286)	-0.000 (-0.125)	0.002 (1.341)	0.003 (1.136)
SOE	0.033 (0.574)	-0.008 (-0.181)	0.072 (1.194)	0.008 (0.148)	-0.011 (-0.263)	0.076 (1.279)	0.047 (0.709)
DUAL	0.026 (1.361)	0.012 (0.582)	0.023 (1.083)	0.025 (1.371)	0.023 (1.149)	0.031 (1.429)	0.016 (0.670)
HIGHTECH	0.067*** (6.086)	0.056*** (3.696)	0.047*** (3.649)	0.069*** (6.967)	0.056*** (3.795)	0.046*** (3.450)	0.020 (1.165)
AGE	-0.139 (-0.757)	0.135 (0.745)	0.297 (1.256)	-0.208 (-1.187)	0.065 (0.350)	0.253 (1.217)	0.348 (1.814)
Constant	4.485*** (4.319)	8.219*** (6.003)	13.181*** (8.322)	4.031*** (4.032)	7.878*** (5.785)	12.689*** (8.078)	17.108*** (12.395)
Year	Control	Control	Control	Control	Control	Control	Control
Industry	Control	Control	Control	Control	Control	Control	Control
R ²	0.901	0.900	0.900	0.897	0.896	0.897	0.905
N	18,294	15,806	13,228	20,465	17,665	14,810	11,941

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively; the t values are in parentheses.

This paper also examines the relationship between the proportion of different types of media reports to the total number of reports and corporate innovation investment to further verify the above conclusion. This paper uses

the positive report rate, neutral report rate, negative report rate, original report rate and reprinted report rate as independent variables, the ratio of corporate innovation investment to total assets (innovation intensity) as the dependent variable, and uses the Tobit model for regression. The results are shown in Appendix 7. In the face of positive media reports and original reports, for every 1% increase in the coverage rate, the company's innovation investment intensity will increase by 1% and 0.7% respectively, which once again supports Hypothesis 2 and Hypothesis 3.

In addition, this paper also divides the media report samples into two sub-samples: print media reports and online media reports, and conducts the above regression tests on the sub-samples respectively. The results are shown in Appendices 8, 9, 10, and 11. Based on the regression results for the sub-sample, the promotional effect of media reports on corporate innovation investment is stable.

5. Discussion

The more fine-grained results of this study also extend the existing literature in several respects. First, the finding that positive reports are more effective than neutral or negative reports is consistent with Chen et al. and Hu et al., both of whom show that positive media coverage facilitates innovation-related outcomes in China [50], [51]. However, unlike Hu et al., who find that negative coverage impedes corporate innovation, we do not observe a statistically significant inhibitory effect of negative reports [51]. One possible explanation is that our dependent variable captures corporate innovation investment rather than realized innovation outputs, so firms may maintain R&D commitment even when media tone is unfavorable. Second, the stronger effect of original reports relative to reprinted reports is broadly in line with Huang et al., who show that the information effect of media coverage is more pronounced when the proportion of original reports is higher, and with Yang et al., who find that original and in-depth reports are more effective in curbing R&D manipulation [52], [53]. Third, the stronger effect observed for non-state-owned enterprises is also consistent with prior Chinese evidence suggesting that the media's monitoring role is more constrained in SOEs but more consequential in non-SOEs. Guo et al. show that media coverage does not effectively restrain executive empire building in SOEs, whereas Borochin and Cu find that, despite political pressure and media bias, media coverage can still influence governance outcomes in non-state-owned firms [54], [55]. Taken together, these comparisons indicate that the present study both confirms the positive governance role of media reports in China and extends the literature by showing that this effect is heterogeneous across report valence, report source, and ownership structure, but not significantly differentiated between high-tech enterprises and non-high-tech enterprises.

There are some implications for enterprises and governments that were concluded from our empirical results: First, enterprises will cope with the role of media reporting and business managers, who can leverage the media and public opinion to align long-term interests and promote the positive development of enterprises. Second, the government should standardize public opinion supervision and improve media-related laws and regulations. Although political media reports promote corporate investment in innovation, more reports are not always better. There are still many media outlets willing to use eye-catching false reports to meet market performance standards, and much information is released without strict review, which will have a negative impact on economic development. Therefore, the government should improve relevant laws and regulations and require it to seek truth from facts, objectivity, and fairness, no matter what type of report it is. Even reports with opinions should be investigated in depth to show the full picture of the reported object as much as possible. In addition, reprinted reports are more likely to spread media sentiment and create an emotional contagion effect in the capital market. Therefore, the review standards for reprinted original reports should also be standardized.

6. Conclusion

From the panel data of the period 2010-2021 of A-share listed companies in Shanghai and Shenzhen (China), the authors conduct a theoretical analysis and empirical test on the relationship between media reports and innovation investment, followed by some conclusions: (1) Media reports increase corporate investment in

innovation. (2) The finding illustrates that media reports are impacted by media emotions. By classifying media reports by attitude and source, its governance role is mainly effective in positive and original reports, reflecting the media's incentive function through positive emotions and reputation effects. (3) The role of media reports in promoting corporate investment in innovation mainly occurs in non-state-owned enterprises.

The limitations of this research: First, the media data and measurement indicators need improvement. When compiling the media report data, this paper did not consider potential collusion between enterprises and the media, or false reports by the media that catered to the market. Did the media, as a third party, report fairly and truly? Will these effects on corporate decision-making change the results of this article? In addition, media reports can be further refined. What changes should media reports bring to the content? Hence, a detailed study would be more meaningful. Second, regarding the distance between the theoretical and practical frameworks, this article did not provide an in-depth discussion of media reports on corporate innovation performance or even corporate value. According to the results of this article, media coverage will stimulate corporate investment in innovation to a certain extent, but does this definitely lead to an increase in corporate value? Since the process of innovation investment and corporate innovation performance is affected by many factors, this article returns the focus to the research question: "The impact of media reports on corporate innovation investment" and takes corporate innovation investment as the dependent variable instead of corporate Innovation performance and corporate value serving as the dependent variables of final concern. Future research will explore the impact of media coverage on innovation performance and corporate value.

Declaration of competing interest

The authors declare that they have no known financial or non-financial competing interests in any material discussed in this paper.

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Author contribution

The contributions to the paper are as follows: Chenxin Ma: Conceptualization, data curation, writing – original draft; Thi Thu Huong Nguyen: Writing—review and editing, supervision; Hoang Nam Nguyen: Methodology, formal analysis; Viet Khoi Nguyen: Writing—review and editing.

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Appendices

Appendix 1: Regression results of media reports on corporate innovation investment: Grouping based on property rights nature and technology type

	(1)	(2)	(3)	(4)
	Nature of property rights		Technology type	
	SOE=0	SOE=1	HIGHTECH=0	HIGHTECH=1
MEDIA _{all}	0.041** (2.706)	0.001 (0.063)	0.031** (2.243)	0.028*** (3.191)
ROA	0.260 (1.183)	0.642 (1.535)	0.585** (2.326)	0.235 (0.990)
SIZE	0.755*** (20.197)	0.753*** (13.880)	0.761*** (16.627)	0.717*** (21.773)
LEV	-0.225* (-1.818)	-0.406** (-2.382)	-0.490*** (-3.232)	-0.172 (-1.633)
CASH	-0.062 (-1.178)	-0.014 (-0.118)	-0.083 (-0.786)	0.028 (0.414)
GROWTH	0.033* (1.884)	0.044 (1.390)	0.028 (0.787)	0.032* (2.006)
TOBINQ	0.028*** (4.144)	-0.004 (-0.220)	0.008 (0.809)	0.024*** (3.864)
TOP	-0.002 (-0.976)	-0.000 (-0.058)	0.002 (0.643)	-0.002 (-1.289)
SOE	—	—	-0.108** (-2.590)	-0.033 (-0.571)
DUAL	-0.007 (-0.395)	0.011 (0.273)	-0.003 (-0.088)	-0.004 (-0.276)
HIGHTECH	0.061*** (4.840)	0.103*** (3.298)	—	—
AGE	-0.325** (-2.418)	-0.390 (-0.825)	-0.559** (-2.499)	-0.341** (-2.294)
Constant	2.034* (2.091)	2.072 (1.082)	2.073 (1.784)	3.277*** (3.228)
Year	Control	Control	Control	Control
Industry	Control	Control	Control	Control
R ²	0.885	0.888	0.849	0.918
N	18,065	7,619	11,546	13,180
Bdiff		0.041		0.008
p-value		0.000		0.280

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively; the t values are in parentheses.

Appendix 2: Regression results of the total number of media reports on corporate innovation investment: T+N period (based on non-state-owned enterprises)

	(1)	(2)	(3)
	Nature of property rights : SOE=0		
	T+1	T+2	T+3

	(1)	(2)	(3)
MEDIA _{all}	0.045*** (3.459)	0.044** (2.972)	0.033** (2.354)
ROA	0.888*** (3.601)	1.187*** (5.996)	1.422*** (8.351)
SIZE	0.671*** (16.111)	0.460*** (6.682)	0.234*** (3.539)
LEV	-0.279* (-2.017)	-0.295* (-2.214)	-0.245 (-1.637)
CASH	0.022 (0.380)	0.070 (1.061)	0.008 (0.110)
GROWTH	0.114*** (6.577)	0.061* (2.090)	0.041 (1.281)
TOBINQ	0.039*** (5.504)	0.043*** (3.914)	0.033** (2.540)
TOP	-0.002 (-0.965)	-0.000 (-0.229)	0.001 (0.421)
DUAL	0.021 (1.097)	0.022 (0.888)	0.031 (1.074)
HIGHTECH	0.061*** (6.202)	0.047*** (3.461)	0.044** (3.281)
AGE	-0.169 (-1.211)	0.005 (0.029)	0.157 (0.675)
Constant	3.486*** (3.352)	7.654*** (5.283)	12.276*** (7.822)
Year	Control	Control	Control
Industry	Control	Control	Control
R ²	0.896	0.889	0.889
N	14,236	12,159	10,052

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively; the t values are in parentheses.

Appendix 3: Regression results of media reports on corporate innovation investment: changing innovation measurement indicators, regression model

	(1)	(2)
	Innovation assets	investment/total Tobit model
MEDIA _{all}	0.001** (2.571)	0.001*** (8.330)
ROA	0.003 (0.759)	0.029*** (15.975)
SIZE	-0.003*** (-5.646)	-0.002*** (-12.607)
LEV	-0.000 (-0.110)	-0.002** (-2.443)
CASH	-0.002** (-2.369)	0.006*** (11.431)
GROWTH	0.000 (1.296)	-0.000 (-1.588)
TOBINQ	0.001*** (6.227)	0.002*** (24.007)
TOP	-0.000 (-0.174)	-0.000*** (-4.593)
SOE	0.000 (0.064)	-0.000 (-1.171)
DUAL	0.000 (0.756)	0.001*** (3.490)
HIGHTECH	0.001*** (3.196)	0.005*** (24.880)
AGE	-0.002 (-0.923)	-0.003*** (-9.530)
Constant	0.096*** (7.054)	0.032*** (11.871)
Year	Control	Control
Industry	Control	Control
R ²	0.837	—
Prob>chi2	—	0.0000
N	25,773	26,136

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 4: Regression results of positive, neutral, and negative media reports on corporate innovation investment: changing innovation measurement indicators and regression models

	(1)	(2)	(3)	(4)	(5)	(6)
	Innovation investment/total assets			Tobit model		
	POS	NEU	NEG	POS	NEU	NEG
MEDIA	0.001*** (3.379)	0.000 (0.820)	0.000 (0.900)	0.002*** (11.857)	-0.000*** (-3.567)	0.000 (0.627)
ROA	0.004 (1.017)	0.004 (1.076)	0.002 (0.550)	0.029*** (15.021)	0.003** (2.490)	0.002 (1.348)
SIZE	-0.003*** (-6.296)	-0.003*** (-5.271)	-0.003*** (-4.671)	-0.002*** (-14.645)	-0.002*** (-15.631)	-0.002*** (-15.500)
LEV	-0.000 (-0.053)	-0.000 (-0.089)	0.000 (0.011)	-0.001** (-2.024)	-0.001** (-2.206)	-0.001* (-1.905)
CASH	-0.002** (-2.727)	-0.002** (-2.758)	-0.002 (-1.638)	0.006*** (10.437)	-0.002*** (-4.332)	-0.001*** (-2.725)
GROWTH	0.000 (0.727)	0.000 (1.434)	0.000 (0.008)	-0.001*** (-2.611)	-0.000 (-0.284)	-0.000 (-0.226)
TOBINQ	0.001*** (5.406)	0.001*** (5.520)	0.000** (2.427)	0.002*** (22.983)	0.001*** (10.701)	0.001*** (8.558)
TOP	0.000 (0.215)	-0.000 (-0.229)	0.000 (0.331)	-0.000*** (-3.957)	-0.000*** (-4.383)	-0.000*** (-3.996)
SOE	0.000 (0.375)	-0.001 (-0.946)	0.000 (0.174)	-0.000 (-0.768)	-0.003*** (-6.785)	-0.002*** (-5.805)
DUAL	0.000 (0.462)	0.000 (0.914)	0.000 (0.358)	0.001*** (3.089)	0.001*** (2.843)	0.000** (1.991)
HIGHTECH	0.001*** (3.672)	0.001** (2.881)	0.001** (2.223)	0.005*** (24.234)	0.001*** (8.825)	0.001*** (8.525)
AGE	-0.001 (-0.364)	-0.001 (-0.636)	0.014*** (6.665)	-0.003*** (-8.777)	0.010*** (23.635)	0.010*** (21.542)
Constant	0.096*** (7.358)	0.095*** (6.885)	0.046*** (3.330)	0.037*** (13.274)	0.045*** (17.020)	0.046*** (16.288)
Year	Control	Control	Control	Control	Control	Control
Industry	Control	Control	Control	Control	Control	Control
R ²	0.841	0.840	0.830	—	—	—
Prob>chi2	—	—	—	0.0000	0.0000	0.0000
N	24,010	23,253	19,798	24,417	23,654	20,269

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 5: Regression results of original and reprinted media reports on corporate innovation investment: changing innovation measurement indicators and regression model

	(1)	(2)	(3)	(4)
	Innovation investment/total assets		Tobit model	
	ORI	Non-ORI	ORI	Non-ORI
MEDIA	0.001*** (3.266)	0.000 (1.747)	0.002*** (10.712)	-0.000** (-2.400)
ROA	0.003 (0.730)	0.003 (0.890)	0.028*** (15.564)	0.002 (1.584)
SIZE	-0.003*** (-5.876)	-0.003*** (-5.460)	-0.002*** (-13.864)	-0.002*** (-17.244)
LEV	-0.000 (-0.095)	0.000 (0.166)	-0.002** (-2.414)	-0.001* (-1.742)
CASH	-0.002** (-2.371)	-0.002** (-2.513)	0.006*** (11.371)	-0.002*** (-4.357)
GROWTH	0.000 (1.309)	0.000 (1.160)	-0.000 (-1.390)	-0.000 (-0.067)
TOBINQ	0.001*** (6.452)	0.001*** (6.239)	0.002*** (24.365)	0.001*** (11.048)
TOP	-0.000 (-0.160)	0.000 (0.253)	-0.000*** (-4.723)	-0.000*** (-4.522)
SOE	0.000 (0.057)	0.000 (0.346)	-0.000 (-1.323)	-0.002*** (-5.607)
DUAL	0.000 (0.756)	0.000 (0.822)	0.001*** (3.376)	0.000** (2.326)
HIGHTECH	0.001*** (3.189)	0.001** (3.005)	0.005*** (24.877)	0.001*** (8.835)
AGE	-0.002 (-0.881)	-0.002 (-0.760)	-0.003*** (-9.503)	0.011*** (25.483)
Constant	0.097*** (7.154)	0.095*** (6.861)	0.034*** (12.679)	0.046*** (17.783)
Year	Control	Control	Control	Control
Industry	Control	Control	Control	Control
R ²	0.837	0.840	—	—
Prob>chi2	—	—	0.0000	0.0000
N	25,765	25,765	26,127	26,127

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 6: Regression results of media reports on corporate innovation investment: changing innovation measurement indicators, regression model (based on the nature of property rights)

	(1)	(2)	(3)	(4)
	Innovation investment/total assets		Tobit model	
	SOE=0	SOE=1	SOE=0	SOE=1
MEDIA _{all}	0.001** (2.783)	0.000 (1.475)	0.002*** (10.347)	0.000 (0.327)
ROA	0.001 (0.140)	0.013** (2.827)	0.026*** (12.921)	0.037*** (10.237)
SIZE	-0.004*** (-5.023)	-0.002*** (-3.573)	-0.002*** (-9.848)	-0.002*** (-8.738)
LEV	-0.000 (-0.048)	-0.001 (-0.640)	-0.002** (-2.361)	-0.003*** (-2.728)
CASH	-0.002 (-1.685)	-0.002 (-1.717)	0.007*** (9.397)	0.005*** (7.183)
GROWTH	0.000 (1.409)	0.000 (0.444)	-0.001** (-2.011)	0.000 (0.728)
TOBINQ	0.001*** (7.148)	0.000 (1.633)	0.002*** (22.673)	0.001*** (7.026)
TOP	-0.000 (-0.382)	0.000 (0.498)	-0.000*** (-4.069)	-0.000** (-2.090)
DUAL	0.000 (0.367)	0.001 (1.250)	0.001*** (3.692)	0.000 (0.211)
HIGHTECH	0.001** (2.775)	0.001* (1.866)	0.005*** (18.601)	0.006*** (17.481)
AGE	-0.002 (-0.692)	-0.003 (-0.582)	-0.003*** (-8.068)	-0.004*** (-6.440)
Constant	0.104*** (6.386)	0.079*** (3.194)	0.028*** (7.812)	0.045*** (10.619)
Year	Control	Control	Control	Control
Industry	Control	Control	Control	Control
R ²	0.830	0.856	—	—
Prob>chi2	—	—	0.0000	0.0000
N	18,065	7,619	18,381	7,755

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 7: Regression results of media coverage rate on corporate innovation investment

	(1)	(2)	(3)	(4)	(5)
	Positive coverage rate	Neutral coverage rate	Negative press rate	Original reporting rate	Reposted coverage rate
MEDIA	0.010*** (12.216)	-0.006*** (-6.314)	-0.006*** (-7.236)	0.007*** (11.864)	-0.001 (-1.620)
ROA	0.023*** (12.772)	0.028*** (15.881)	0.025*** (13.574)	0.025*** (13.405)	0.028*** (15.510)
SIZE	-0.001*** (-10.177)	-0.001*** (-9.042)	-0.001*** (-10.450)	-0.000*** (-4.406)	-0.001*** (-9.327)
LEV	-0.002** (-2.523)	-0.002*** (-2.609)	-0.002** (-2.359)	-0.002*** (-3.532)	-0.002** (-2.464)
CASH	0.006*** (11.818)	0.006*** (11.964)	0.006*** (11.710)	0.004*** (8.417)	0.006*** (11.880)
GROWTH	-0.001** (-2.400)	-0.000 (-1.602)	-0.001* (-1.910)	-0.001** (-2.313)	-0.000 (-1.385)
TOBINQ	0.002*** (27.603)	0.002*** (26.851)	0.002*** (27.829)	0.002*** (27.396)	0.002*** (27.228)
TOP	-0.000*** (-4.679)	-0.000*** (-4.650)	-0.000*** (-4.935)	-0.000*** (-5.646)	-0.000*** (-4.928)
SOE	-0.001** (-2.227)	-0.000* (-1.839)	-0.001** (-2.247)	-0.002*** (-7.093)	-0.001** (-2.100)
DUAL	0.001*** (4.050)	0.001*** (3.983)	0.001*** (3.880)	0.001*** (5.369)	0.001*** (3.887)
HIGHTECH	0.005*** (24.247)	0.005*** (24.847)	0.005*** (24.391)	0.005*** (25.807)	0.005*** (24.776)
AGE	-0.003*** (-9.445)	-0.003*** (-9.760)	-0.003*** (-9.702)	0.001** (2.175)	-0.003*** (-9.895)
Constant	0.022*** (8.492)	0.026*** (10.015)	0.029*** (10.987)	0.008*** (3.259)	0.025*** (9.780)
Year	Control	Control	Control	Control	Control
Industry	Control	Control	Control	Control	Control
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000
N	26,136	26,136	26,136	26,136	26,136

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 8: Regression results of media reports on corporate innovation investment: based on print media and online media subsamples

	(1)	(2)
	Paper media	Internet media
MEDIA _{all}	0.019*	0.016*
	(1.992)	(1.819)
ROA	0.364	0.339
	(1.636)	(1.505)
SIZE	0.749***	0.757***
	(23.260)	(23.480)
LEV	-0.319**	-0.336**
	(-2.749)	(-2.881)
CASH	-0.020	-0.028
	(-0.311)	(-0.436)
GROWTH	0.040**	0.035**
	(2.758)	(2.737)
TOBINQ	0.017**	0.015**
	(2.703)	(2.451)
TOP	-0.000	-0.000
	(-0.158)	(-0.199)
SOE	-0.064	-0.063
	(-1.302)	(-1.402)
DUAL	-0.002	-0.008
	(-0.112)	(-0.474)
HIGHTECH	0.075***	0.073***
	(4.213)	(4.300)
AGE	-0.505**	-0.540**
	(-2.717)	(-2.866)
Constant	2.697**	2.622**
	(2.756)	(2.704)
Year	Control	Control
Industry	Control	Control
R ²	0.883	0.882
N	25,781	26,658

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 9: Regression results of positive, neutral and negative media reports on corporate innovation investment: based on print media and online media sub-samples

	(1)	(2)	(3)	(4)	(5)	(6)
	Paper media			Internet media		
	POS	NEU	NEG	POS	NEU	NEG
MEDIA	0.035*** (3.281)	0.011 (0.969)	0.015 (1.273)	0.032*** (3.537)	0.003 (0.385)	-0.004 (-0.488)
ROA	0.457* (2.027)	0.444* (1.925)	0.457 (1.729)	0.304 (1.368)	0.337 (1.488)	0.325 (1.448)
SIZE	0.732*** (23.034)	0.747*** (22.292)	0.745*** (24.469)	0.752*** (23.605)	0.760*** (23.286)	0.762*** (23.601)
LEV	-0.308** (-2.738)	-0.324** (-2.653)	-0.328** (-2.684)	-0.337** (-2.897)	-0.332** (-2.851)	-0.332** (-2.850)
CASH	-0.022 (-0.314)	-0.035 (-0.538)	-0.026 (-0.386)	-0.031 (-0.482)	-0.028 (-0.435)	-0.028 (-0.444)
GROWTH	0.041*** (3.243)	0.044*** (3.611)	0.038*** (3.209)	0.032** (2.531)	0.036** (2.946)	0.036** (2.946)
TOBINQ	0.018** (2.721)	0.019** (2.927)	0.018** (2.426)	0.013* (1.888)	0.018** (2.853)	0.019*** (3.124)
TOP	0.000 (0.177)	-0.000 (-0.011)	-0.000 (-0.039)	-0.000 (-0.219)	-0.000 (-0.255)	-0.000 (-0.239)
SOE	-0.055 (-1.060)	-0.083 (-1.651)	-0.064 (-1.181)	-0.060 (-1.346)	-0.065 (-1.437)	-0.066 (-1.466)
DUAL	-0.006 (-0.347)	0.000 (0.024)	-0.001 (-0.049)	-0.009 (-0.493)	-0.008 (-0.443)	-0.008 (-0.469)
HIGHTECH	0.078*** (4.386)	0.075*** (4.010)	0.079*** (4.670)	0.073*** (4.279)	0.073*** (4.318)	0.073*** (4.269)
AGE	-0.426** (-2.416)	-0.464** (-2.593)	-0.422** (-2.305)	-0.529** (-2.808)	-0.548** (-2.937)	-0.541** (-2.894)
Constant	2.783** (2.887)	2.632** (2.650)	2.489** (2.605)	2.666** (2.750)	2.642** (2.727)	2.594** (2.682)
Year	Control	Control	Control	Control	Control	Control
Industry	Control	Control	Control	Control	Control	Control
R ²	0.885	0.886	0.886	0.882	0.882	0.882
N	24,025	23,366	19,816	26,635	26,507	26,608

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 10: Regression results of media originality and reprinted reports on corporate innovation investment: based on print media and online media sub-samples

	(1)	(2)	(3)	(4)
	Paper media		Internet media	
	ORI	Non-ORI	ORI	Non-ORI
MEDIA	0.023*	0.007	0.036**	0.000
	(2.117)	(1.209)	(2.601)	(0.015)
ROA	0.366	0.368	0.334	0.335
	(1.647)	(1.641)	(1.482)	(1.484)
SIZE	0.748***	0.752***	0.752***	0.761***
	(23.267)	(23.148)	(23.449)	(23.564)
LEV	-0.318**	-0.320**	-0.338**	-0.333**
	(-2.738)	(-2.740)	(-2.904)	(-2.863)
CASH	-0.019	-0.019	-0.027	-0.028
	(-0.302)	(-0.294)	(-0.424)	(-0.432)
GROWTH	0.040**	0.040**	0.034**	0.036**
	(2.762)	(2.767)	(2.688)	(2.822)
TOBINQ	0.017**	0.018**	0.014*	0.018**
	(2.698)	(2.866)	(2.121)	(2.873)
TOP	-0.000	-0.000	-0.000	-0.000
	(-0.155)	(-0.161)	(-0.188)	(-0.239)
SOE	-0.064	-0.065	-0.062	-0.066
	(-1.304)	(-1.315)	(-1.391)	(-1.442)
DUAL	-0.002	-0.002	-0.008	-0.008
	(-0.108)	(-0.117)	(-0.489)	(-0.461)
HIGHTECH	0.075***	0.075***	0.073***	0.073***
	(4.216)	(4.212)	(4.275)	(4.307)
AGE	-0.502**	-0.508**	-0.535**	-0.543**
	(-2.706)	(-2.719)	(-2.848)	(-2.880)
Constant	2.701**	2.675**	2.656**	2.606**
	(2.763)	(2.725)	(2.731)	(2.694)
Year	Control	Control	Control	Control
Industry	Control	Control	Control	Control
R ²	0.883	0.883	0.882	0.882
N	25,773	25,781	26,658	26,658

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.

Appendix 11: Regression results of media reports on corporate innovation investment (property rights grouping): based on print media and online media sub-samples

	(1)	(2)	(3)	(4)
	Paper media		Internet media	
	SOE=0	SOE=1	SOE=0	SOE=1
MEDIA _{all}	0.030*	-0.009	0.035**	0.001
	(2.196)	(-0.516)	(2.469)	(0.065)
ROA	0.244	0.648	0.210	0.646
	(1.122)	(1.557)	(1.010)	(1.579)
SIZE	0.758***	0.755***	0.765***	0.761***
	(20.121)	(13.983)	(20.586)	(14.096)
LEV	-0.218	-0.404**	-0.231*	-0.432**
	(-1.791)	(-2.366)	(-1.864)	(-2.547)
CASH	-0.066	-0.015	-0.079	-0.011
	(-1.257)	(-0.126)	(-1.454)	(-0.097)
GROWTH	0.036*	0.044	0.029*	0.038
	(2.001)	(1.371)	(1.835)	(1.263)
TOBINQ	0.031***	-0.003	0.027***	-0.003
	(4.740)	(-0.175)	(3.969)	(-0.141)
TOP	-0.002	-0.000	-0.002	-0.000
	(-1.031)	(-0.074)	(-1.077)	(-0.062)
DUAL	-0.006	0.011	-0.014	0.010
	(-0.369)	(0.260)	(-0.873)	(0.225)
HIGHTECH	0.061***	0.103***	0.059***	0.101***
	(4.831)	(3.313)	(5.113)	(3.249)
AGE	-0.333**	-0.392	-0.342**	-0.437
	(-2.466)	(-0.832)	(-2.523)	(-0.915)
Constant	2.110*	2.083	1.926*	2.047
	(2.166)	(1.089)	(1.998)	(1.090)
Year	Control	Control	Control	Control

	(1)	(2)	(3)	(4)
Industry	Control	Control	Control	Control
R ²	0.885	0.888	0.883	0.888
N	18,068	7,624	18,772	7,804

Note: ***, **, and * indicate significant correlation at the 1%, 5%, and 10% statistical levels respectively.