

Innovation-Driven Stock Valuation: The Influence Mechanism of R&D Investment in China Stock Market

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Abstract: Scientific and technological innovation plays a vital role in the development of enterprises and national economic growth. Stock valuation reflects the capital market's recognition of enterprises, and whether technological innovation can promote the improvement of enterprise stock valuation needs to be empirically tested. Therefore, this study selects listed companies in Shenzhen and Shanghai Stock Exchange from 2017 to 2022 as samples to explore the impact of technological innovation on stock valuation through empirical tests. The results show that technological innovation has a positive impact on stock valuation. The research in this paper not only enriches the relevant literature of technological innovation and enterprise valuation, but also has important reference value for enterprise management and guiding investors to rational investment.

Keywords: Listed company, Scientific and technological innovation, Stock valuation

1. Introduction

In the China stock market, the company's R&D investment is generally considered to be an important means to improve the level of enterprise innovation and enhance market competitiveness. Technological innovation not only has positive significance for national economic growth, but also can bring multiple benefits to enterprises such as super profits, enhance market position and attract social capital investment. It has become a mainstream strategy for companies to enhance the level of innovation by increasing research and development investment. However, whether R&D investment can effectively increase a company's stock valuation still needs more in-depth research.

This study will focus on whether R&D investment can significantly increase a company's stock valuation. Specifically, this paper will select different stock valuation models, in-depth study of companies in China stock market, in order to reveal the impact mechanism of R&D investment on stock valuation. The research question is that, under different stock valuation models, is there a significant positive correlation between R&D investment and stock valuation?

At present, the relationship between R&D investment and stock valuation has attracted wide attention. Some studies have pointed out that a high level of R&D investment can enhance the innovation ability of enterprises, thereby enhancing market competitiveness and profitability. However, it is also argued that not all R&D investment can directly translate into an increase in stock valuations. The current research status mainly focuses on the overall analysis of the relationship between R&D investment and stock valuation of companies in different industries and different

market values, while there are relatively few studies on the difference of influence of different stock valuation models.

The significance of this study lies in the in-depth study of the relationship between R&D investment and stock valuation from multiple perspectives, so as to provide investors with more specific and actionable investment recommendations. Through the application of different stock valuation models, we will reveal the sensitivity of different models to the impact of R&D investment, and provide investors with a more accurate valuation reference. At the same time, for enterprise management, this study will also provide more specific strategic guidance to help them more wisely formulate R&D investment strategies and realize the organic combination of scientific and technological innovation and enterprise value.

2. Literature review

In recent years, technological innovation, as a key factor of national core competitiveness, has attracted wide attention from academic circles, especially in the relationship between enterprise scientific and technological innovation and stock valuation, scholars have conducted in-depth research. In terms of the definition of scientific and technological innovation, Pavitt proposed that patent activities could evaluate the pattern of innovative activities and become an effective indicator to measure scientific and technological innovation [1]. Since then, Xie emphasized the reliability of patent output and measured the level of technological innovation by the number of patents of enterprises [2].

As an important part of innovation, research and development (R&D) investment has attracted much attention. Shao measured enterprise technological innovation by the ratio of R&D investment to main business income [3]. In terms of multi-index comprehensive evaluation, Meng studied the impact of technological innovation capability on the growth of enterprises from three dimensions of technological innovation input, output and innovation environment [4]. Jiang and Wang selected three indexes of innovation input, innovation output and innovation efficiency to build a comprehensive evaluation system for enterprise innovation capability [5].

In terms of stock valuation, Li deeply analyzed the profitability, operating capacity, solvency and development capacity of listed companies in the pharmaceutical industry, and revealed the relationship between these factors and stock valuation [6]. Zeng and Shen comprehensively analyzed the valuation characteristics of GEM, emphasizing the impact of factors such as industry composition, scale and growth on stock valuation [7]. According to the study of Yu Ping and Li Jing, enterprises with good fundamentals in the A-share market can obtain excess share price returns, while enterprises with high valuation cannot obtain excess share price returns [8]. Liu and Li highlighted the importance of heterogeneous beliefs having a positive impact on enterprise valuation [9].

Regarding the relationship between technological innovation and company stock valuation, Hirshleifer pointed out that the market's failure to respond to innovation information in a timely manner may lead to stock mispricing [10]. Ren believe that due to information asymmetry, investors fail to accurately evaluate the stock value of companies [11].

Although technological innovation has an important impact on stock valuation, domestic scholars have conducted few studies on this effect. This paper aims to establish a model through the panel data of China stock market listed companies, and conduct empirical tests with Stata software to deeply explore the innovation-driven stock valuation, paying special attention to the influence mechanism of R&D investment. This research is expected to fill the gap in the domestic academic field on the valuation effect of enterprise technological innovation, and provide scientific basis for investors and enterprises to make decisions.

3. Research design

3.1. Sample selection and data source

This paper takes Shenzhen and Shanghai listed companies from 2017 to 2022 as the research object, and adopts the following processing strategies to ensure the reliability of the research: first, financial listed companies are excluded to maintain the industry consistency of the sample; secondly, the listed companies that do not include R&D investment in their financial statements are excluded to ensure that the research objects have the operability of scientific and technological innovation; finally, listed companies with serious data missing are excluded to ensure data integrity. All data is derived from the CSMAR database, with a sample size of 13581, covering listed companies of different industries and sizes, providing a comprehensive sample base for the study.

3.2. Variable setting

3.2.1. Explained variable: stock market valuation

This study uses price-to-book ratio (*PB*), price-to-earnings ratio (*PE*), price-to-cash ratio (*PCF*), and price-to-sales ratio (*TBQ*) as the explained variable. *PB* is calculated by dividing the price per share by the net asset per share. The price-to-book number reflects the market's valuation of the company. When the price-to-book ratio is less than 1, it may indicate that the company is undervalued; when the value is equal to 1, it reflects that the company's market value is equal to its net assets; a value greater than 1 may indicate that the market has high expectations for the company's future growth. *PE*, *PCF* and *TBQ* measure the relationship between earnings per share, cash flow per share, and operating income per share to the stock price, respectively, to provide a multidimensional perspective for a comprehensive assessment of a company's financial position. These valuation indicators will provide a powerful reference to help investment decisions.

3.2.2. Explanatory variable: technological innovation

To represent the level of technological innovation, we select *the number of R&D personnel*, *the proportion of the R&D personnel*, *R&D expense* and *the proportion of R&D expense* as explanatory variables. Compared with absolute numbers, the proportion of R&D personnel and R&D expense can more scientifically and reasonably measure the level of innovation investment of an enterprise relative to its size.

3.2.3. Control Variables

In order to reduce endogenous bias, we introduced a series of control variables, referring to the study of Chen Ling [12]. These control variables include the natural logarithm of total assets (*Ln Assets*), basic earnings per share growth rate (*BEPSGR*), return on assets (*ROA*), inventory turnover rate (*ITR*), the natural logarithm of time to market (*Ln Age*), and asset liability ratio (*ALR*), etc. These variables are designed to control for other factors that may affect stock valuations, making the results more accurate and reliable.

3.3. Research methods

We will use OLS multiple regression analysis method to carry out statistical analysis of the above variables. By building an empirical model, we will explore the impact of R&D investment on stock market valuation and further analyze the market mechanism involved. The goal of this study is to deeply understand how technological innovation, driven by innovation, shapes the stock valuation of

enterprises in China stock market, so as to provide scientific decision-making basis for investors and enterprises.

3.4. Empirical model construction

In order to prove the hypothesis in this paper, the following model is established:

$$Y_i = aX_{1i} + bX_{2i} + \varepsilon_i \quad (1)$$

In the model, Y is taken as the index of stock valuation, and measured by PB , PE , PCF and TBQ respectively. X_1 represents the innovation variable, namely *the number of R&D personnel*, *the proportion of the R&D personnel*, *R&D expense* and *the proportion of R&D expense*. X_2 is the control variable, including *Ln Assets*, *BEPSGR*, *ROA*, *ITR*, *Ln Age*, and *ALR*. ε_i is the error perturbation term.

4. Empirical results and analysis

4.1. Descriptive statistical analysis

Table 1: Descriptive Statistics

Variable	Max	P50	Min	Mean	Sd
<i>PB</i>	14.2291	2.4869	0.5313	3.0425	2.0511
<i>PE</i>	544.0782	32.0579	1.0286	50.4092	60.784
<i>PCF</i>	675.9332	24.5492	0.7469	46.8657	72.2797
<i>TBQ</i>	6.3406	1.5724	0.8392	1.8535	0.919
<i>the number of R&D personnel</i>	836001	254	0	759.6052	7508.975
<i>the proportion of the R&D personnel</i>	0.9449	0.1298	0	0.1592	0.1337
<i>R&D expense</i>	21600000000	77400000	0	289000000	1020000000
<i>the proportion of R&D expense</i>	0.7064	0.0392	0	0.0498	0.0491
<i>ROA</i>	0.7859	0.0496	0.0003	0.0591	0.0471
<i>Ln Assets</i>	28.6365	22.1653	19.1319	22.3524	1.3057
<i>Ln Age</i>	3.4965	2.1972	0	2.0308	0.9192
<i>ITR</i>	7287061	3.7679	0	754.6766	64798.02
<i>ALR</i>	0.9726	0.3805	0.0143	0.3889	0.1844
<i>BEPSGR</i>	135.1677	0.0681	-10.5231	0.5043	3.1372

Table 1 shows that among the listed companies in China stock market, the mean value of PB is 3.0425, the minimum value is 0.5313, the maximum value is 14.2291, and the standard deviation is 2.0511. The results of large standard deviation show that there are large differences in the stock valuations of China listed companies. PE shows a large range, the maximum is 544.0782, the average is 50.4092, and the standard deviation is 60.7840, indicating that the distribution of PE in the sample presents a large difference. PCF is very wide, the maximum value is 675.9332, the average value is 46.8657,

and the standard deviation is 72.2797, which shows that the data is widely dispersed. The variation range of *TBQ* data is small, with the maximum value being 6.3406, the average value being 1.8535, and the standard deviation being 0.9190, which reflects that the variation of *TBQ* is relatively stable. *The number of R&D Personnel* ranges widely from 0 to 836001, with a mean of 759.6052 and a standard deviation of 7508.975, illustrating significant variability in R&D personnel among listed companies. *Personnel Percentage* varies from 0 to 0.9449, with a mean of 0.1592 and a standard deviation of 0.1337, indicating the proportion of personnel relative to the total number of employees. *R&D Expense* exhibits substantial variability, ranging from 0 to 21600000000, with a mean of 289000000 and a standard deviation of 1020000000. Similarly, *the proportion of R&D expense* ranges from 0 to 0.7064, with a mean of 0.0498 and a standard deviation of 0.0491, reflecting the proportion of R&D expenses relative to total revenue. *ROA* (Return on Assets) varies between 19.1319 and 28.6365, with a mean of 22.3524 and a standard deviation of 1.3057, indicating the efficiency of assets in generating profit. The Natural Logarithm of Assets (*Ln Assets*) ranges from 0 to 3.4965, with a mean of 2.0308 and a standard deviation of 0.9192, reflecting the scale of company assets. Natural Logarithm of Age (*Ln Age*) exhibits considerable variation, ranging from 0 to 7287061, with a mean of 754.6766 and a standard deviation of 64798.02, reflecting the logarithmic age of the listed companies. Inventory Turnover Rate (*ITR*) ranges from 0.0143 to 3.7679, with a mean of 0.3889 and a standard deviation of 0.1844, reflecting the efficiency of inventory management. Finally, the Asset-Liability Ratio (*ALR*) varies from -10.5231 to 0.9726, with a mean of 0.5043 and a standard deviation of 3.1372, indicating the financial structure of the listed companies.

4.2. Regression Analysis

4.2.1. Regression analysis of the proportion of researchers to stock valuation

In table 2, *the proportion of the R&D personnel* is positively correlated with *PE*, with a regression coefficient of 0.0511, passing the test with a significance level of 1%, that is, there is a significant positive relationship between *PE* and tech innovation. The relationship between *the proportion of the R&D personnel* and *PCF*, *PB* and *TBQ* is also positive.

Return on assets (*ROA*), corporate scale (*Ln Assets*), turnover speed (inventory turnover rate, *ITR*) asset-liability ratio (*ALR*) have a negative impact on stock valuation, while corporate growth basic earnings per share growth rate (*BEPSGR*) and the age of the company (*Ln Age*) have a positive impact on stock valuation, and these relationships are statistically significant. This indicates that the change of stock valuation level of listed companies is closely related to these factors, and provides a more comprehensive background for the impact of technological innovation on stock valuation.

Table 2: Regression analysis of the proportion of researchers to stock valuation

	(1) <i>PE</i>	(2) <i>PCF</i>	(3) <i>PB</i>	(4) <i>TBQ</i>
<i>the proportion of the R&D personnel</i>	41.17*** (10.59)	79.87*** (14.00)	3.041*** (21.89)	1.377*** (20.97)
<i>ROA</i>	-527.2*** (-24.89)	-171.8*** (-12.38)	15.96*** (22.71)	6.768*** (21.60)
<i>Ln Assets</i>	-10.81*** (-20.45)	-6.514*** (-11.00)	-0.448*** (-25.02)	-0.210*** (-28.32)
<i>BEPSGR</i>	0.500** (2.36)	0.344** (2.04)	-0.0029 (-0.39)	-0.00660* (-1.90)

Table 2: (continued).

<i>ITR</i>	- 0.00000661*** (-6.93)	- 0.00000805*** (-11.20)	- 0.000000260*** (-4.89)	- 0.000000149*** (-2.96)
<i>Ln Age</i>	2.619*** (4.65)	-6.321*** (-7.52)	-0.422*** (-19.33)	0.180*** (20.79)
<i>ALR</i>	-10.91*** (-2.66)	-24.58*** (-5.30)	2.955*** (21.92)	-0.0675 (-1.32)
<i>_cons</i>	315.3*** (29.34)	212.1*** (18.05)	11.34*** (32.49)	5.599*** (37.41)
<i>N</i>	13581	13581	13581	13581
<i>R²</i>	0.2028	0.0603	0.2517	0.2105

Note: ***, ** and * are significant at 1%, 5% and 10% levels respectively.

4.2.2. Regression analysis of the number of researchers on stock valuation

In table 3, *Ln number of R&D personnel* (the natural logarithm of *the number of R&D personnel*) is positively correlated with stock valuation (*PE*), and the regression coefficient is 1.715, which passes the test with a significance level of 1%, that is, there is a significant positive relationship between *the number of R&D personnel* and stock valuation.

The influence of other control variables is also noteworthy. For example, variables such as growth rate of basic earnings per share (*BEPSGR*) and the age of the company (*Ln Age*) also have a significant positive impact on stock valuation.

Table 3: Regression analysis of the number of researchers on stock valuation

	(1) <i>PE</i>	(2) <i>PCF</i>	(3) <i>PB</i>	(4) <i>TBQ</i>
<i>Ln number of R&D personnel</i>	1.715*** (4.98)	3.279*** (8.06)	0.206*** (19.27)	0.0927*** (18.48)
<i>ROA</i>	-532.4*** (-24.83)	-181.9*** (-12.94)	15.48*** (22.57)	6.551*** (21.40)
<i>Ln Assets</i>	-12.06*** (-22.32)	-8.921*** (-14.16)	-0.579*** (-31.50)	-0.269*** (-34.44)
<i>BEPSGR</i>	0.501** (2.31)	0.346** (2.04)	-0.00262 (-0.34)	-0.00644* (-1.91)
<i>ITR</i>	-0.00000541*** (-8.93)	-0.00000517*** (-15.99)	-0.000000182*** (-6.88)	-0.000000114*** (-2.95)
<i>Ln Age</i>	2.431*** (4.30)	-6.689*** (-7.87)	-0.431*** (-19.45)	0.176*** (20.05)
<i>ALR</i>	-14.93*** (-3.67)	-32.40*** (-6.94)	2.682*** (20.02)	-0.191*** (-3.77)
<i>_cons</i>	342.7*** (32.12)	265.0*** (22.28)	13.77*** (39.60)	6.694*** (44.43)
<i>N</i>	13581	13581	13581	13581
<i>R²</i>	0.2401	0.0640	0.2740	0.2275

Note: ***, ** and * are significant at 1%, 5% and 10% levels respectively.

4.2.3. Regression analysis of technological innovation capital investment on stock valuation

In the table 4, *Ln R&D expense* (natural logarithm of scientific and technological innovation capital investment) was used as independent variable to conduct regression analysis on different stock valuation indicators (*PE*, *PCF*, *PB*, *TBQ*). *Ln R&D expense* is positively correlated with stock valuation, with regression coefficients of 1.664 (*PE*), 3.197 (*PCF*), 0.205 (*PB*) and 0.0952 (*TBQ*), and has passed the test with significance level of 1%.

The influence of other control variables should also be considered, such as *ROA*, the natural logarithm of total assets, growth rate of basic earnings per share, etc. These variables also have significant explanations for stock valuation, indicating that the change of stock valuation level of listed companies is closely related to these factors.

Table 4: Regression analysis of technological innovation capital investment on stock valuation

	(1) <i>PE</i>	(2) <i>PCF</i>	(3) <i>PB</i>	(4) <i>TBQ</i>
<i>Ln R&D expense</i>	1.664*** (4.49)	3.197*** (7.84)	0.205*** (14.51)	0.0952*** (14.77)
<i>ROA</i>	-535.6*** (-24.71)	-188.0*** (-13.21)	15.08*** (22.10)	6.363*** (20.92)
<i>Ln Assets</i>	-12.43*** (-21.85)	-9.644*** (-14.56)	-0.627*** (-32.00)	-0.293*** (-33.96)
<i>BEPSGR</i>	0.500** (2.29)	0.344** (2.01)	-0.00268 (-0.36)	-0.00646* (-1.96)
<i>ITR</i>	-0.00000538*** (-8.61)	-0.00000567*** (-17.27)	-0.000000180*** (-6.22)	-0.000000113*** (-2.86)
<i>Ln Age</i>	2.455*** (4.35)	-6.643*** (-7.82)	-0.428*** (-19.42)	0.178*** (20.32)
<i>ALR</i>	-14.76*** (-3.63)	-32.06*** (-6.86)	2.705*** (20.24)	-0.180*** (-3.56)
_cons	330.3*** (30.71)	241.2*** (20.62)	12.26*** (34.75)	6.010*** (40.15)
<i>N</i>	13581	13581	13581	13581
<i>R</i> ²	0.2041	0.0638	0.2741	0.2288

Note: ***, ** and * are significant at 1%, 5% and 10% levels respectively.

4.2.4. Regression analysis of the proportion of scientific research investment in stock valuation

In table 5, *the proportion of R&D expense* (proportion of scientific research investment) is taken as the independent variable, and regression analysis is carried out on different stock valuation indicators (*PE*, *PCF*, *PB*, *TBQ*).

There is a positive correlation between the proportion of scientific research investment and stock valuation, and the regression coefficients are 158.9 (*PE*), 226.8 (*PCF*), 10.24 (*PB*), 4.802 (*TBQ*), and the significance level has passed the test of 1%.

The influence of other control variables should also be considered, such as *ROA*, the natural logarithm of total assets, growth rate of basic earnings per share, etc. These variables also have significant explanations for stock valuation, indicating that the change of stock valuation level of listed companies is closely related to these factors.

Table 5: Regression analysis of the proportion of scientific research investment in stock valuation

	(1) <i>PE</i>	(2) <i>PCF</i>	(3) <i>PB</i>	(4) <i>TBQ</i>
<i>the proportion of R&D expense</i>	158.9*** (12.84)	226.8*** (12.14)	10.24*** (22.40)	4.802*** (21.64)
<i>ROA</i>	-516.3*** (-24.41)	-157.9*** (-11.46)	16.63*** (23.72)	7.086*** (22.69)
<i>Ln Assets</i>	-10.86*** (-20.44)	-6.805*** (-11.54)	-0.455*** (-25.30)	-0.213*** (-28.61)
<i>BEPSGR</i>	0.462** (2.17)	0.287* (1.73)	-0.00549 (-0.71)	-0.00777** (-2.27)
<i>ITR</i>	- 0.00000448*** (-8.24)	- 0.00000427*** (-8.24)	- 0.000000109*** (-4.73)	- 0.000000803** (-2.21)
<i>Ln Age</i>	2.963*** (5.27)	-5.982*** (-7.09)	-0.403*** (-18.55)	0.189*** (21.97)
<i>ALR</i>	-4.062 (-0.99)	-17.14*** (-3.66)	3.353*** (24.28)	0.125** (2.38)
<i>_cons</i>	311.1*** (28.47)	215.7*** (18.21)	11.25*** (32.09)	5.532*** (36.81)
<i>N</i>	13581	13581	13581	13581
<i>R²</i>	0.2174	0.0815	0.3094	0.2679

Note: ***, ** and * are significant at 1%, 5% and 10% levels respectively.

4.3. Regression analysis of different types of enterprises

4.3.1. Analysis of innovative enterprises

We divided the sample companies into two parts, one is high-tech industry enterprises, such as computer, artificial intelligence, biological research and development related enterprises, and the other is other ordinary enterprises. Table 6 shows the regression results of the sample of high-tech enterprises. The regression coefficients of *ln R&D expense* (research expenditure) were 5.257 (*PE*), 10.88 (*PCF*), 0.762 (*PB*) and 0.380 (*TBQ*), which passed the test of 1% significance level. Compared with the full sample in table 4, the correlation coefficient between R&D expenses and stock valuation is higher in table 6, indicating that R&D expenses have a greater impact on stock valuation in high-tech enterprises and are more valued by investors.

Table 6: Analysis of innovative enterprises

	(1) <i>PE</i>	(2) <i>PCF</i>	(3) <i>PB</i>	(4) <i>TBQ</i>
<i>Ln R&D expense</i>	5.257*** (3.45)	10.88*** (5.25)	0.762*** (14.50)	0.380*** (16.02)
<i>ROA</i>	-552.8*** (-14.67)	-203.2*** (-6.09)	14.93*** (11.97)	6.499*** (12.10)
<i>Ln Assets</i>	-16.31*** (-8.45)	-20.05*** (-8.16)	-1.214*** (-19.02)	-0.656*** (-22.79)

Table 6: (continued).

<i>BEPSGR</i>	0.972** (2.56)	0.225 (0.83)	0.00496 (0.33)	-0.00539 (-0.88)
<i>ITR</i>	-0.0000127*** (-3.76)	-0.00000630 (-1.5)	-0.000000511*** (-3.01)	-0.000000602*** (-9.41)
<i>Ln Age</i>	0.921 (0.81)	-5.927*** (-3.25)	-0.510*** (-11.20)	0.281*** (15.87)
<i>ALR</i>	-4.158 (-0.56)	-25.34** (-2.32)	3.200*** (13.30)	-0.246** (-2.53)
_cons	354.2*** (14.32)	332.0*** (10.95)	15.17*** (19.46)	8.667*** (24.92)
<i>N</i>	4077	4077	4077	4077
<i>R</i> ²	0.2102	0.0513	0.3062	0.2395

Note: ***, ** and * are significant at 1%, 5% and 10% levels respectively.

4.3.2. Analysis of non-innovative enterprises

Table 7 shows the regression results of stock valuation for non-high-tech enterprises. The regression coefficients of scientific research expenditure were 0.439 (*PE*), 1.437 (*PCF*), 0.0974 (*PB*) and 0.0470 (*TBQ*). For non-innovative companies, research expenditure seems to have no significant impact on stock valuation, except for statistical significance on *PCF* (market capitalization). This is different from the situation for innovative firms and may reflect that non-innovative firms are more focused on other factors in the market.

For non-innovative enterprises, the impact of scientific research expenditure on stock valuation is relatively small, and factors such as return on assets, total asset size, inventory turnover and asset-liability ratio become the main factors affecting stock valuation. The positive effect of the balance sheet ratio may reflect investors' preference for the financial structure of non-innovative firms.

Table 7: Analysis of non-innovative enterprises

	(1) <i>PE</i>	(2) <i>PCF</i>	(3) <i>PB</i>	(4) <i>TBQ</i>
<i>Ln R&D expense</i>	0.439 (1.11)	1.437*** (3.72)	0.0974*** (8.05)	0.0470*** (8.84)
<i>ROA</i>	-526.4*** (-19.61)	-177.7*** (-12.45)	15.08*** (18.74)	6.343*** (17.42)
<i>Ln Assets</i>	-11.35*** (-18.33)	-7.535*** (-11.52)	-0.540*** (-26.56)	-0.238*** (-28.44)
<i>BEPSGR</i>	0.324 (1.26)	0.392* (1.87)	-0.00510 (-0.55)	-0.00632 (-1.63)
<i>ITR</i>	-0.00000439*** (-19.74)	-0.00000502 (-27.52)	-0.000000120*** (-13.16)	-0.000000652*** (-17.24)
<i>Ln Age</i>	3.143*** (4.84)	-6.691*** (-7.16)	-0.381*** (-15.79)	0.143*** (14.85)
<i>ALR</i>	-15.70*** (-3.12)	-30.14*** (-6.30)	2.685*** (16.65)	-0.0588 (-1.01)

Table 7: (continued).

_cons	324.2*** (26.91)	221.2*** (18.74)	11.99*** (30.36)	5.600*** (34.97)
N	9504	9504	9504	9504
R ²	0.2013	0.0649	0.2652	0.2250

Note: ***, ** and * are significant at 1%, 5% and 10% levels respectively.

5. Research conclusions and policy recommendations

Through the empirical analysis of China stock companies from 2017 to 2022, this study deeply discusses the relationship between technological innovation and stock valuation, providing an important reference for understanding stock valuation and improving the enthusiasm and ability of Chinese enterprises in technological innovation. The results show that technological innovation has a significant positive promoting effect on stock valuation. Moreover, for high-tech enterprises, investors place greater emphasis on research and development expenses, and companies with high investment in research and development expenses will be given higher stock valuations.

Based on this, the following policy recommendations are put forward:

First of all, enterprises should strengthen innovation capital investment, and gradually realize the shift from focusing on the number of patents to focusing on the quality of patents. This will help enhance the competitiveness of enterprises in the international market and make positive contributions to national economic growth. At the same time, enterprises need to increase the information disclosure of scientific and technological innovation activities, the core competitiveness of scientific and technological innovation ability to promote the improvement of the company's stock valuation level, and promote the healthy development of the capital market.

Secondly, investors can take technological innovation as an important supplementary basis for the intrinsic value of enterprises in the decision-making process. However, in order to establish a rational investment concept, investors need to evaluate the intrinsic value of listed companies in a scientific way. Technological innovation behavior is important, but there are certain risks, investors should avoid blindly chasing, but also need to consider various factors in decision-making.

The recommendations are intended to provide guidance for enterprise management and investors to push Chinese enterprises to achieve more remarkable results in scientific and technological innovation, while promoting the long-term stable development of the capital market.

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