An Empirical Study on the Premium of Low-Priced Stocks in China's A-Share Market

Author name:

Huizheng Liu[1], Xinyao Han[2], Jiaqi Zhou[1], Yidan Ma[1], Hang Yin[1]

Author affiliation:

[1] College of Economics and Management, Beijing University of Technology, Beijing, China

[2] Beijing-Dublin International College, Beijing University of Technology, Beijing, China

Corresponding Authors:

Huizheng Liu

Beijing University of Technology

College of Economics and Management

liuhuizheng@bjut.edu.cn

100 Pingleyuan, Chaoyang District, Beijing 100124, China

Abstract: This paper selects the data of China's A-shares from 2001 to 2020 to study the premium effect of low-cost stocks in China's A-share market from different sectors using multiple regression analysis. The research results show that there is a premium effect of low-cost stocks in each sector of the A-share market. The increase in the shareholding ratio of institutional investors and the attention of analysts can reduce the premium effect of low-cost stocks.

Keywords: Low-priced stocks, Premium effect, Excess return, Financial anomalies

1. Introduction

According to the style index released by China Shenyin Wanguo Securities Research Institute from 2000 to 2022, among numerous style indexes, the average rate of return of the low-priced stock index is the highest. From the perspective of individual stocks, low-priced stocks are more likely to have multiple bull stocks, showing very considerable investment value. Existing literature studies have illuminated that investors do consider nominal prices in stock selection, and individual investors generally prefer low-priced stocks (Schultz, 2000). This particular preference is primarily due to the common misconception that penny stocks have more upside potential (Birru & Wang, 2016).

If stock nominal price irregularities are driven by investors' nominal price illusions and irrational behavior, we argue that this phenomenon should be more pronounced in inefficient stock markets. Lai T. Hoang (2018) found that there is a noticeable premium for low-priced stocks in the Vietnamese stock market, which is similar to the Chinese stock market. However, domestic scholars have not reached a consistent conclusion on whether there is a premium effect of low-priced stocks in the A-share market. Liang (2008) used the data of A-share from 1998 to 2007 and found that high-priced stocks have an obvious premium effect, while low-priced stocks have an apparent discount effect. Que and Li (2006) found that there is a negative correlation between the rate of return of A-share market stocks and stock prices, and a premium effect of low-priced stocks exists in the A-share market. Does the premium effect of low-priced stocks exist in China's A-share market? If so, is there any difference in performance in different markets? What factors may be related? In addition, the A-share market itself is a constantly regulated and developing market. Will the introduction of new systems such as margin financing and securities lending affect the premium effect of low-priced stocks?

Investors in China's A-share market are predominantly individual investors whose irrational behavior is prone to have an impact on trading in the Chinese stock market. While foreign scholars have begun to pay increasing attention to the relationship between share prices and yields, there has been little research on the A-share market in domestic academia. Studying the premium effect of low-priced stocks in China's A-share market and uncovering its impact mechanism can not only enrich the current research results for the emerging stock market but also help investors better understand the market and provide evidence to support regulators in further improving the margin financing and securities lending mechanism, accelerating investor education and improving the information disclosure mechanism.

Given the above analysis, the possible marginal contributions of this essay are: (1) In addition to the analysis of the trading data of stocks, the statements made by investors at the stock forum were also subjected to textual analysis; (2) the Science and Technology Innovation Board (STIB) was included in the study of the premium effect of low-priced stocks; (3) substantial

perspectives, such as the proportion of shares held by institutional investors, the degree of attention by analysts, the margin financing and securities lending and the volume of postings at stock bars, were examined to see whether the premium effect of low-priced stocks was attenuated or enhanced.

The subsequent parts of the article are structured as follows: section II is a literature review and research hypothesis; section III is a model design; section IV is an empirical test and analysis of the results; section V is an analysis of the factors affecting the premium effect of low-priced stocks, and the final section is conclusion.

2. Literature Review and Research Hypothesis

2.1 Previous study on the existence of the premium effect on low-priced stocks

Earlier studies on the effect of low-priced stocks tended to verify the existence through nominal prices. For instance, Pinches and Simon (1972) and Edmister and Greene (1980) utilized the absolute price method and concluded that a portfolio of lower-priced stocks had higher returns compared to higher-priced stocks. In terms of the Chinese stock market, the low-priced stock premium effect persisted during the two decades from 1995 to 2015 Que and Li (2006). As the premium effect of low-priced stocks has been progressively studied, on the one hand, after controlling the financial leverage factor of low-priced stock companies, Christie (1982) found that the premium effect of low-priced stock is weakened. On the other hand, Xiao and Xu (2004) and Hwang and Lu (2008) found higher returns for low-priced stocks by controlling for fundamental factors such as the company's book-to-market ratio. However, the existing studies are not yet generalized, for example in China's A-share market, there is no significant relationship between stock prices and turnover rates (Liang, 2008).

Bachelier (1900) was the first to study market efficiency and creatively proposed a model for the movement of stock prices. Since then, the random walk hypothesis proposed by Alexander (1961) and the proof of US stock prices moving like a random series by Robert (1967) have illustrated the unpredictability of stock prices. Samuelson (1965) demonstrated the relationship between efficient markets and fair game, laying the theoretical foundation for the efficient market hypothesis. Based on these findings, Fama (1965) proposed the efficient market hypothesis which stated that in a perfect market state, market information will be reflected in share prices without reservation and investors cannot utilize past share prices to make predictions about future trends (Fama, 1970).

Referring to the basic view of the efficient market hypothesis, if the Chinese stock market is efficient, then the past prices of stocks as historical information should be reflected in the stock price, then there is no low-priced stock premium effect. Considering that the Chinese stock market has been developed for a relatively short period and has not yet reached the level of an efficient market, the following hypotheses are proposed in this paper:

Hypothesis 1: There is a low-priced stock premium effect in the Chinese stock market.

2.2 A study of the factors affecting the premium effect of low-priced stocks

In the Internet era, investor sentiment is a nonnegligible factor in influencing stock returns (Yang et al., 2016). The returns of low-priced stock indices are more significantly affected by investor sentiment relative to others (Li et al., 2014). Xie and Tang (2021) and Rahman et al. (2022) all argued that positive investor sentiment has a positive impact on stock returns, and Gu

and Xu (2022) find a positive relationship between investor sentiment and market indices as well. Gao et al. (2022) utilized Bi-LSTM deep learning techniques to analyze the textual data sentiment tendency of stock bar comments and found that investor sentiment affects the market return of stocks in STAR market. Hence, this paper proposes the following hypothesis.

Hypothesis 2: The increase in the number of stock bar posts will enhance the low-priced stock premium effect after limiting other conditions.

Investor sentiment can be further subdivided into individual and institutional investor sentiments whose sources and composition are different (Sun, 2007). Although market index returns and the trading strategies and sentiment of institutional investors are influenced by individual investor sentiment (Lu et al., 2015; Wu, 2017), institutional investors are able to partially predict the sentiment of retail investors (Liu & Liu, 2014). In comparison to individual investors, institutional investors have a higher level of financial literacy, access to a wider range of information sources, stronger financial strength, and a professional team to develop their investment strategies, hence they are less influenced by irrational factors in behavior finance such as the illusion of nominal prices. Chen and Tao (2011) explored the relationship between the spillover effect of stock market returns and the proportion of institutional investor's holdings, suggesting that the premium effect of low-priced stocks would be more significantly affected by changes of the latter. Therefore, this paper proposes the hypothesis:

Hypothesis 3: After restricting other conditions, with the increase of shareholding of institutional investors, the premium effect of low-priced stocks declines.

Similar to the logic behind the percentage of shares held by institutional investors, analyst attention represents the extent to which listed companies are concerned by financial market professionals. Tang and Song (2002) and Chan and Hameed (2006) argued that share prices rise as analysts focus more on the underlying securities, and the higher the premium. Lu and Peng (2012) also found that the price of stocks with low valuation levels and stock prices favored by analysts will increase with attention.

The more attention a stock receives from analysts, indicating that the listed company is favored by professionals, and investors will tend to make long-term value investments. It will be possible to identify low-attention companies that can generate high yields in case of price reversals (Ahmad & Oriani, 2022). Additionally, equity analysts can provide more and more accurate information about investment ratings and performance forecasts (Wang & Yao, 2008). The research reports they produce can increase the information supply of listed companies, thus reducing the information asymmetry between investors and corporations and making the low-priced stock premium effect somewhat weaker (Luo et al., 2017). Therefore, this paper proposes the hypothesis:

Hypothesis 4: After limiting other conditions, the more attention by analysts, the weaker the premium effect of low-priced stocks.

Lifting short-selling restrictions can correct an overvalued stock price. Restrictions on short selling prevent short sellers from participating in the market when traders in the market are dominated by long traders, resulting in a stock price that is noticeably different from its actual value, and then stocks are overvalued. Investors can borrow and sell shares that are considered to

be overvalued through margin financing and securities lending, which moderates the persistent overvaluation (Li et al., 2014). Consequently, the above elaboration leads to a fifth research hypothesis:

Hypothesis 5: Ceteris paribus, the business of margin financing and securities lending of listed companies can attenuate the premium effect of low-priced stocks.

3. Model Design

3.1 Model establishment

For the empirical testing of the premium effect on low-priced stocks, the following econometric model was constructed using the Ordinary Least Squares (OLS) multiple regression method:

$$\mathrm{Return}_{i,t} = \alpha + \beta_1 \mathrm{Price}_{i,t} + \sum \mathrm{Controls}_t + \sum \mathrm{IND} + \sum \mathrm{YEAR} + \varepsilon \quad (1)$$

Where $\mathrm{Return}_{i,t}$ is monthly returns on stocks, $\mathrm{Price}_{i,t}$ is stock opening price of the stock on the first trading day of the month, $\sum \mathrm{Controls}_t$ represent value of control variables, $\sum \mathrm{IND}$ for industry dummy variables, $\sum \mathrm{YEAR}$ for year dummy variables. β_1 denotes the sensitivity coefficient of the stock price variable ($\mathrm{Price}_{i,t}$). In the model, i denotes different listed individuals and t represents the current period.

If the coefficient β_1 of variable $\mathrm{Price}_{i,t}$ is significantly negative, it verifies the existence of a premium effect on low-priced stocks. Simultaneously, it represents that the lower the price of the stock, the higher the return on the stock will be.

3.2 Variable selection

This paper uses nominal stock prices as explanatory variables and stock returns are used as the explanatory variable to capture the low-priced stock premium effect. Different stocks might have the same price when the stocks still have individual differences, while variables such as the scale of the firm will perform differently. Therefore, relevant variables are controlled when examining the effect of the low-priced share premium in this paper. Based on the literature that market-to-net ratio, firm size, risk sensitivity, and so on are considered as control variables, (Hwang & Lu, 2009; Zhang & Chen, 2017; Luo et al., 2017), all variables in this paper are exposited in Table 1.

Table 1. The Definition of Variables

Type	Variable	Abbreviation	Definition
Independent Variable	Stock return (%)	Return	The company's return on reinvesting cash dividends in stocks for the month
Dependent Variable	Stock price (CNY)	Price	The company's stock opening price on the first trading day of each month
	Book-to-market ratio	BTM	The book value of listed companies divided by the total market value
	Earnings per share (CNY/per share)	EPS	Company net income divided by capitalization
Control	Total Asset (CNY)	Asset	The company's total assets at the end of the year taking the logarithm

Variables	Debt to asset ratio	DTA	Company liabilities divided by total assets
	Return on total assets	ROA	Company net profit divided by total assets
	Return on equity	ROE	Company net income divided by equity
	Differential turnover ratio	Dturn	The number of shares traded by a listed company per month divided by the number of outstanding shares per month
	Risk sensitivity coefficient	Beta	The degree of volatility of a listed company's stock price relative to the overall stock market
	Illiquidity indicator	ILLIQD	The ratio of the sum of the absolute value of daily returns of listed companies to the trading volume of the current month

Source: Author's calculation

3.3 Sample selection and data sources

In order to exclude the impact of the COVID-19 epidemic on the stock market, A-share listed companies in Shanghai and Shenzhen, China, from 2001 to 2020 were selected as sample data in this paper. Considering the efficiency of data, ST and *ST stocks as well as stocks in the financial sector have been excluded. In the meanwhile, in order to reduce the effect of outliers, this paper reduces the top and bottom 1% for continuous variables. The data used were obtained from the CSMAR database. The total sample consists of 297,804 data items.

4. Empirical Test and Result Analysis

Table 2 presents the results of descriptive statistics for the selected variables. Overall, the share prices of the sample companies were relatively normal, while there is a wide range of monthly stock returns between listed companies, with the maximum rate reaching 329.9%, and the minimum rate only 2.7%.

In terms of the control variables, the variation of Dturn is relatively large, with the maximum rate reaching 329.9%, and the minimum rate only 2.7%. Regarding Beta, listed companies varied more remarkably, with a maximum risk sensitivity coefficient of 11, and a minimum of -4, indicating that some companies' stocks varied several times more than market returns. The minimum values for EPS, ROA, and ROE are all negative, demonstrating that some listed companies made losses during the sample period. Moreover, the raw data for ILLIQD were multiplied by the eighth power of 10.

Table 2. Variable Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum value	Maximum value
Price	14.730	13.330	2.290	79.720
Return	1.104	13.440	-31.310	47.370
Dturn	0.529	0.579	0.027	3.299
Beta	0.725	0.431	-4.000	11.000
ILLIQD	1.289	2.431	0. 024	17.060

EPS	0.342	0.540	-1.439	2.504
BTM	0.647	0.242	0.122	1.139
DTA	0.447	0.211	0.055	0.988
ROA	0.034	0.067	-0.313	0.195
ROE	0.054	0.150	-0.912	0.325
Asset	21.940	1.295	19.310	25.970

Source: Author's calculation

Referring to foreign scholars Hwang and Lu (2008) who selected data on listed companies from the New York Stock Exchange (NYSE) and the National Association of Securities Dealers Automated Quotations (NASDAQ) respectively, controlling for company fundamentals and stock trading related variables, it is found that stocks with lower nominal prices on both exchanges had significantly higher returns than those with higher prices. This essay uses multiple regressions to test whether there is a low-priced stock premium effect in the China's A-share market, based on controlling for variables such as a company's DTA, EPS and Dturn. The current China's A-share market can be divided by market type into the Main-Board Market (MBM), the Growth Enterprise Market (GEM) and the Science and Technology Innovation Board (STAR) Market. This article will examine each of them separately.

4.1 Examining the premium effect of low-priced stocks in the overall A-share market

Table 3 shows the regression results of the stock price on return for the current period as well as the backward five periods, controlling for the variables. Examination of the relationship between share price and return over the current and next five periods reveals that the coefficients are all significantly negative at the 1% level. It implies that the higher the share price of a listed company, the lower its return. The overall trend is for the absolute value of the regression coefficient to become smaller, suggesting that this effect is gradually diminishing.

Therefore, a low-priced stock premium effect exists in the overall China A-share market and it exists for at least six months.

Table 3. Test of premium of low-priced stocks under overall A-share market

	Return					
	t	t+1	t+2	t+3	t+4	t+5
Price	-0.2080***	-0.2220***	-0.1881***	-0.1399***	-0.0842***	-0.0889***
	(0.0032)	(0.0034)	(0.0036)	(0.0038)	(0.0041)	(0.0043)
Rt-1	-0.0887***	-0.0217***	-0.0608***	-0.0018	-0.0890***	0.0020
	(0.0018)	(0.0019)	(0.0020)	(0.0021)	(0.0022)	(0.0025)
CV	control	control	control	control	control	control
_cons	-20.7342***	-6.8803***	-10.4107***	-13.2066***	-20.4591***	-14.1650***
	(0.6269)	(0.6747)	(0.7072)	(0.7535)	(0.8006)	(0.8532)
N	297804	267470	238473	210445	183143	156311
r2	0.1451	0.1063	0.0953	0.0751	0.0788	0.0765
F	1075.5347	676.6542	534.5400	363.6628	333.1711	275.4224
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

Note: *, ** and *** indicate that results are significant at level of 10%, 5% and 1% respectively, and the same

below.

4.2 Examining the premium effect of low-priced stocks in the A-share main-board market，the A-share GEM and the A-share STAR market

Table 4, Table 5, and Table 6 respectively present the regression results for the current period and for the five subsequent periods after the relevant variables have been controlled for. The regression coefficient of the t-period between the share price of listed companies in the MBM, the A-share GEM, and the A-share STAR market and their returns is statistically significant at the 1% level.

Further examining the trend of the relationship in the next five periods, it is found that the regression coefficients of share price and return in the MBM and the A-share GEM are significantly negative at the 1% level. The coefficients in the A-share STAR market present the same results except being the 10% level in period t+1 and the 5% level in period t+5. This implies that the higher the share price of a listed company in the Chinese A-share MBM, the A-share GEM, and the A-share STAR market, the lower its stock return.

The above results illustrate that the low-priced stock premium effect exists in the three markets and it exists for at least six months. It is worth noting that the absolute values of the regression coefficients of stocks and returns for the A-share MBM are higher than the values of the overall market in the corresponding periods. However, in the GEM, the values are lower than the overall market for all periods except period t+2, with a larger variation from period t+2 to period t+4. Apart from this, the regression coefficients for the STAR market do not satisfy this criterion in five periods, and the absolute values are relatively small.

Table 4. Test of premium of low-priced stocks under A-share MBM

	Return					
	t	t+1	t+2	t+3	t+4	t+5
Price	-0.2122***	-0.2294***	-0.1898***	-0.1433***	-0.0917***	-0.0966***
	(0.0034)	(0.0037)	(0.0039)	(0.0041)	(0.0044)	(0.0047)
Rt-1	-0.0947***	-0.0194***	-0.0575***	0.0068**	-0.0890***	0.0010
	(0.0019)	(0.0020)	(0.0021)	(0.0022)	(0.0023)	(0.0026)
CV	control	control	control	control	control	control
_cons	-20.3812***	-7.5918***	-10.5694***	-13.4636***	-20.4215***	-13.9893***
	(0.6439)	(0.6947)	(0.7303)	(0.7773)	(0.8261)	(0.8802)
N	275068	247295	220682	194882	169686	144888
r2	0.1493	0.1090	0.0960	0.0765	0.0811	0.0803
F	1026.6954	643.5812	498.5359	343.3662	318.4919	269.1123
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

Table 5. Test of premium of low-priced stocks under A-share GEM

	Return					
	t	t+1	t+2	t+3	t+4	t+5
Price	-0.1980***	-0.1994***	-0.2092***	-0.1372***	-0.0513***	-0.0495***
	(0.0102)	(0.0108)	(0.0109)	(0.0116)	(0.0124)	(0.0132)

Rt-1	-0.0383***	-0.0417***	-0.0899***	-0.0883***	-0.0905***	0.0118
	(0.0065)	(0.0068)	(0.0069)	(0.0072)	(0.0077)	(0.0084)
CV	control	control	control	control	control	control
_cons	-29.2036***	4.8952	-8.9936*	-9.5890**	-18.5690***	-9.3776*
	(3.3644)	(3.7320)	(4.2285)	(3.5573)	(3.8020)	(4.0793)
N	22736	20175	17791	15563	13457	11423
r2	0.1210	0.0892	0.0996	0.0820	0.0676	0.0448
F	100.8270	63.6302	63.3487	46.2742	32.4604	17.7900
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

Table 6. Test of premium of low-priced stocks under A-share STAR market

	Return					
	t	t+1	t+2	t+3	t+4	t+5
Price	-0.1268***	-0.0603*	-0.1403***	-0.1169***	-0.1554***	-0.1120**
	(0.0264)	(0.0300)	(0.0312)	(0.0348)	(0.0374)	(0.0393)
Rt-1	-0.0687*	-0.0580	-0.0896**	-0.0961**	0.0290	0.0081
	(0.0271)	(0.0305)	(0.0306)	(0.0322)	(0.0348)	(0.0361)
CV	control	control	control	control	control	control
_cons	-70.6068***	-33.0337*	-52.2022***	-53.1080**	-75.3912***	-73.9927***
	(12.7647)	(14.7298)	(15.7529)	(18.2353)	(19.9367)	(20.8464)
N	1463	1232	1016	823	655	539
r2	0.1512	0.0948	0.1367	0.1502	0.1465	0.1327
F	18.4250	9.1074	11.3239	10.2004	8.4606	6.1804
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

5. Analysis of the factors affecting the premium effect of low-priced stocks

5.1 Influencing factors and model design

5.1.1 Influencing factors and descriptive statistics

This paper selects the shareholding ratio of the following four factors affecting the low-priced stock premium effect to analyze. (1) Shareholding ratio of institutional investors. The larger the ratio, the higher the proportion of shares held by institutional investors. (2) Concern by analysts. (3) Whether the underlying securities. (4) Number of share bar posts. Drawing on Yang et al. (2016) and Fang and Na (2020), the number of posts in the East Wealth stock bar was used as a representative indicator of investors' attention to the stock. This article counts the total number of posts in the East Wealth stock bar of the listed company during the month. The data used are from the CSMAR database.

Table 7. Factor Variables Influencing the Premium of Low-Priced Stocks

Variable	Abbreviation	Measurement
Number of share bar posts	Post	Total number of posts in Eastern Fortune stock postings of listed companies during the statistical time period
Concern by analysts	AnaAtt	The number of analysts (teams) who have conducted research

		and analysis on the company in a year, without counting the number of team members separately, is taken as 1. Take the natural logarithm of the number of tracking analysts plus 1
Whether the underlying securities	Short	Dummy variable, takes 1 if the listed company is eligible for margin financing and securities lending in that month, otherwise it takes 0
Shareholding ratio of institutional investors (%)	InsI	Number of shares held by institutional investors divided by total share capital

Source: Author's calculation

From the descriptive statistics displayed in Table 8, the standard deviation of Post (216.5) shows the remarkable difference in share bar postings between listed companies. Its maximum value (1472) indicates that investors are very enthusiastic about the stock in that period. The mean value of AnaAtt (6.138) suggests that listed companies in the sample are followed by an average of more than 6 analysts per year. Additionally, Short's mean value indicates that the proportion of all listed companies qualified for margin financing and securities lending in the sample period is 19.7%. The average of InsI proves that approximately 47.40% of the shares of listed companies were held by institutional investors during the sample period.

Table 8. Descriptive Statistics of Factor Variable Influencing the Premium of Low-Priced Stocks

Variable	Mean	Standard Deviation	Minimum Value	Maximum Value
Post	65.030	216.500	0	1,472
AnaAtt	6.138	8.942	0	41
Short	0.197	0.397	0	1
InsI	47.400	23.840	0.443	91.720

Source: Author's calculation

5.1.2 Model and research design

To examine the impact of four influential factor variables on the premium effect of low-priced shares, an econometric regression model was constructed as follows:

Model 1: The influence of institutional investors' shareholding on the premium effect of low-priced stocks

$$\mathrm{Return}_{i,t} = \alpha + \beta_1 \mathrm{Price}_{i,t} + \beta_2 \mathrm{InsI} \times \mathrm{Price}_{i,t} + \sum \mathrm{Controls}_{i,t} + \sum \mathrm{YEAR} + \sum \mathrm{IND} + \varepsilon \quad (2)$$

$\mathrm{Return}_{i,t}$ denotes the monthly return of the stock, and $\mathrm{Price}_{i,t}$ denotes the opening price of the stock on the first trading day of period t. $\mathrm{InsI} \times \mathrm{Price}_{i,t}$ is the interaction term between institutional investor ownership and stock price, and β_2 is its coefficient. i represents an individual listed company, and t denotes the current period.

Model 2: Impact of the level of analyst attention on the premium effect of low-priced stocks

$$\mathrm{Return}_{i,t} = \alpha + \beta_1 \mathrm{Price}_{i,t} + \beta_3 \mathrm{AnaAtt} \times \mathrm{Price}_{i,t} + \sum \mathrm{Controls}_{i,t} + \sum \mathrm{YEAR} + \sum \mathrm{IND} + \varepsilon \quad (3)$$

In the model, $\mathrm{AnaAtt} \times \mathrm{Price}_{i,t}$ represents the interaction term between analyst attention and stock price, and β_3 is the coefficient of the interaction term.

Model 3: The impact of whether the underlying securities on the premium effect of low-priced stocks

$$\mathrm{Return}_{i,t} = \alpha + \beta_1 \mathrm{Price}_{i,t} + \beta_4 \mathrm{Short} \times \mathrm{Price}_{i,t} + \sum \mathrm{Controls}_{i,t} + \sum \mathrm{YEAR} + \sum \mathrm{IND} + \varepsilon \quad (4)$$

$\mathrm{Short} \times \mathrm{Price}_{i,t}$ indicates interaction term of between whether the underlying securities and the stock price, β_4 is the coefficient of the interaction term $\mathrm{Short} \times \mathrm{Price}_{i,t}$.

Model 4: The impact of the number of stock bar posts on the premium effect of low-priced stocks

$$\mathrm{Return}_{i,t} = \alpha + \beta_1 \mathrm{Price}_{i,t} + \beta_5 \mathrm{Post} \times \mathrm{Price}_{i,t} + \sum \mathrm{Controls}_{i,t} + \sum \mathrm{YEAR} + \sum \mathrm{IND} + \varepsilon \quad (5)$$

$\mathrm{Post} \times \mathrm{Price}_{i,t}$ indicates Interaction term between number of stock bar posts and stock price, β_5 is the coefficient of the interaction term $\mathrm{Post} \times \mathrm{Price}_{i,t}$.

Hwang and Lu (2008) selected data on listed companies from the NYSE (corresponding to the Chinese MBM) and the NASDAQ (corresponding to China' s GEM) respectively and studied that, various effects affecting the low-priced stock premium due to distinct variables under different market conditions. However, the listing standards, investor entry thresholds, and regulatory standards for companies in China's MBM, GEM, and STAR markets are different. Based on existing literature and current specific conditions in the Chinese stock market, this paper will examine the impact of institutional investors' shareholding ratio, the degree of being followed by analysts, whether they are underlying securities, and the number of stock bar posts on the premium effect of low-priced A-share stocks from the overall A-share market, the MBM, and the GEM and STAR markets. Meanwhile, the paper will also explore how these factors behave in bull and bear markets. This paper selects the most recent period of bull and bear markets in China' s A-share market. Since there is no official basis for bull and bear market transitions in China' s A-share market, the reference is from Jiang and Gong (2020), defining the bull market period from March 2014 to May 2015 and the bear market period from June 2015 to December 2020.

5.2 Empirical Test

5.2.1 Analysis under the overall A-share market

Table 9 illuminates the results of the regression analysis that the existence of the low-priced stock premium effect in the overall A-share market is again verified by the significant negative correlation between stock prices and returns.

Separately, the regression coefficient of the interaction term Price × InsI, Price × Ana and Price × Short in Model 1, Model 2, and Model 3 respectively are all significantly positive at the 1% statistical level and it is aligned with the hypotheses that the increase in the proportion of shares held by institutional investors, the margin financing and securities lending and the increased level of attention from analysts weaken the low-priced stock premium effect. In Model 4, the regression coefficient of Price × Post is significantly negative at the 5% level which is consistent with that in the overall A-share market, the increased number of posts by listed companies in the East Wealth stock bar enhances this effect.

Table 9. Regression results of factors affecting the premium effect of low-priced stocks under the overall A-share market

	Dependent variable: Return			
	Model 1	Model 2	Model 3	Model 4
Price	-0.3356***	-0.3536***	-0.2478***	-0.2047***
	(0.0058)	(0.0052)	(0.0035)	(0.0034)
Price×InsI	0.2310***			
	(0.0081)			

Price×Ana		0.0566***		
		(0.0016)		
Price×Short			0.0119***	
			(0.0033)	
Price×Post				-0.0026**
				(0.0008)
CV	control	control	control	control
_cons	-17.5510***	-11.8518***	-19.2442***	-20.9321***
	(0.7495)	(0.6742)	(0.5988)	(0.6300)
N	216372	297804	297804	297804
r2	0.1460	0.1487	0.1169	0.1452
F	803.8655	1083.6529	1359.5359	1053.3582
p	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

Table 10 shows the test results of the factors affecting the low-priced stocks' premium effect under the overall A-share market divided into different market conditions for bull and bear markets. Both in Model 1 and Model 2, the coefficient of intersection terms Price × InsI and Price x Ana is significantly positive at the 5% or 1% levels respectively, suggesting that in both conditions, the premium effect of low-priced stocks is always diminished by an increase in the proportion of institutional investors or the level of attention by analysts. While in Model 3, the coefficient of the cross-product Price × Short is negative in bull markets at 1% significant level and positive in bear markets at 5% significant levels. It shows that the premium effect of low-priced stocks is enhanced by margin financing and securities lending in a bull market but declined in a bear market. Due to the more pronounced role of the margin financing and securities lending in the bull market, shareholders tend to leverage to buy stocks.

From model 4, the interaction term Price × Post has a negative coefficient and is significant at the 1% level in bear markets, except in bull markets where the coefficient is positive but insignificant. It indicates that the enhancement effect of the listed company stock ban on the premium of low-priced stocks is significant only in bear markets.

Table 10. Regression results of factors affecting the premium of low-priced stocks under different conditions in the overall market

	Bull market				Bear market			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Price	-0.1964***	-0.2557***	0.0339**	-0.1644***	-0.2750***	-0.3197***	-0.2096***	-0.1674***
	(0.0155)	(0.0170)	(0.0128)	(0.0104)	(0.0067)	(0.0067)	(0.0048)	(0.0044)
Price×InsI	0.0732**				0.1949***			
	(0.0231)				(0.0097)			
Price×Ana		0.0392***				0.0523***		
		(0.0057)				(0.0020)		
Price×Short			-0.1829***				0.0115**	
			(0.0112)				(0.0044)	
Price×Post				0.0511				-0.0054***

				(0.0360)				(0.0009)
CV	control	control	control	control	control	control	control	control
_cons	-46.1894***	-40.9798***	-86.1786***	-45.4897***	-22.6759***	-17.9506***	-18.5745***	-27.9218***
	(2.7610)	(2.4394)	(2.5301)	(2.3484)	(1.0823)	(0.9747)	(0.9274)	(0.9253)
N	16708	21813	21813	21813	103213	133816	133816	133816
r2	0.2919	0.2855	0.2154	0.2840	0.1041	0.1055	0.0789	0.1011
F	237.1277	300.1146	213.5897	297.9259	363.1583	477.9375	409.2940	455.8949
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

5.2.2 Analysis under the A-share Main-Board Market, the A-share GEM and the A-share STAR market

The factors affecting the low-priced stock premium in the A-share MBM, GEM, and STAR market were examined and Table 11, Table 12, and Table 13 demonstrate the results of the regression analysis. Overall, stock prices and returns are significantly negatively correlated in all four models, indicating that the low-priced stock premium exists in the three markets.

Separately, the regression result of model 1, the interaction term Price × InsI has a positive coefficient that is significant at 1% statistical level in MBM but insignificant in the STAR market. It is consistent with the hypothesis that the premium of low-priced stocks decreases with the rise of institutional investors' shareholding, stating that this effect exists in the A-share MBM and A-share GEM.

Based on the regression result of Model 2, the coefficient of Price × Ana is significantly positive at 1% statistical level, and the result is also in line with the hypothesis that in the A-share MBM, the A-share GEM and the A-share STAR market, there is a negative relationship between the level of attention by analysts and the effect.

In Model 3, the regression coefficient of Price × Short is significantly positive at the 1% statistical level in MBM, while it is significantly negative at the 5% in GEM. It indicates that margin financing and securities lending attenuates the premium of low-priced stocks in the A-share main-board market, but in the A-share GEM, it enhances the premium of low-priced stocks which is inconsistent with the hypothesis. The effect of stocks in the STAR market has not been tested as the Shanghai Stock Exchange regulates that these stocks can be the underlying securities on the first day of listing.

However, in Model 4, under the A-share MBM, the coefficient of Price × Post is significantly positive at the 1% level, which contradicts the hypothesis that an increase in the number of posts in the stock bars will decline the low-priced stock premium effect. It is probably caused by the more rational investors. Conversely, the regression coefficients for both GEM and STAR markets are significantly negative at the 1% level, suggesting that the enhancement effect of volume of increasing postings by listed companies in the corresponding stock bars.

Table 11. Analysis of factors affecting the premium of low-priced stocks in the A-share Main-Board market

	Model 1	Model 2	Model 3	Model 4
Price	-0.3844***	-0.3718***	-0.2558***	-0.2542***
	(0.0068)	(0.0056)	(0.0037)	(0.0034)
Price×InsI	0.2837***			

	(0.0091)			
Price×Ana		0.0617***		
		(0.0017)		
Price×Short			0.0117***	
			(0.0035)	
Price×Post				0.0043***
				(0.0008)
CV	control	control	control	control
_cons	-17.0665***	-10.9735***	-18.4850***	-18.8292***
	(0.7709)	(0.6930)	(0.6115)	(0.5917)
N	198645	275068	275068	275068
r2	0.1509	0.1533	0.1200	0.1201
F	767.0044	1037.4597	1293.6528	1294.4344
p	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

Table 12. Analysis of factors affecting the premium of low-priced stocks in the A-share GEM

	Model 1	Model 2	Model 3	Model 4
Price	-0.2555***	-0.2540***	-0.1837***	-0.1469***
	(0.0140)	(0.0158)	(0.0113)	(0.0118)
Price×InsI	0.1986***			
	(0.0261)			
Price×Ana		0.0235***		
		(0.0050)		
Price×Short			-0.0314**	
			(0.0108)	
Price×Post				-0.0219***
				(0.0025)
CV	control	control	control	control
_cons	-25.4146***	-23.1263***	-32.6699***	-34.1041***
	(3.9749)	(3.6083)	(3.5668)	(3.4064)
N	17727	22736	22736	22736
r2	0.1241	0.1218	0.1213	0.1239
F	78.3620	98.4397	97.9759	100.3268
p	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

Table 13. Analysis of factors affecting the premium of low-priced stocks in the A-share STAR market

	Model 1	Model 2	Model 4
Price	-0.1031*	-0.1676***	0.2383***
	(0.0405)	(0.0325)	(0.0421)
Price×InsI	-0.0199		
	(0.0419)		
Price×Ana		0.0186*	

		(0.0087)	
Price×Post			-0.0653***
			(0.0060)
CV	control	control	control
_cons	-83.8997***	-58.3608***	-94.5309***
	(14.9379)	(13.9689)	(12.4757)
N	900	1463	1463
r2	0.1616	0.1539	0.2151
F	11.3588	17.5469	26.4371
p	0.0000	0.0000	0.0000

Source: Author's calculation

5.2.3 Analysis of factors affecting the premium of low-priced stocks

Table 14 and Table 15 state the regression results for the A-share MBM and GEM under different market conditions in bull and bear markets. As the first companies in the STAR market were only listed on 22 July 2019 and did not experience a complete bull market, it is impossible to conduct the same regression analysis.

From Model 1, in the MBM, the coefficients of Price × InsI are all significantly positive at the 1% statistical level, indicating that the premium of low-priced stocks being attenuated by the rising shareholding ratio of institutional investors exists in both bull and bear markets. However, the coefficient for the GEM market being in a bull market is not significant, and therefore for the GEM market, this effect is more pronounced in bear markets.

In Model 2, the coefficients of Price × Ana are positive and significant at the 1% statistical level in both bear and bull markets under the MBM. However, the GEM was only significant at the 1% statistical level during the bear market. This indicates that in the MBM, the level of analyst attention passively influences the effect in both bull and bear markets, while in the GEM, this effect is more pronounced in bear markets.

In Model 3, in MBM, the cross-multiplier Price × Short is negative in bull markets and positive in bear markets, significant at the 1% and 5% levels respectively. This illustrates that in bull markets, margin financing and securities lending enhances the low-priced stock premium, while in bear markets, it attenuates the effect. Nevertheless, in the GEM, the coefficient is negative in both bull and bear markets, whereas only the former is significant at the 1% level, indicating that the premium of low-priced stocks in a bull market is influenced by the strengthening of margin financing and securities lending.

In terms of Model 4, in the MBM, the interaction term Price × Post has a negative but non-significant coefficient in bear markets. Conversely, the coefficient in a bull market is positive and significant at the 10% level. It demonstrates that with the increase in the number of posts in the corresponding stock bars, the enhancement influence on the premium of low-priced stocks is not apparent. In the GEM, the coefficient is negative but not significant at the 1% level until the bear market, meaning the effect is more pronounced in a bear market.

Table 14. Results of factors affecting the premium of low-priced stocks under different conditions in the A-share Main-Board market

Bull market	Bear market

	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Price	-0.2495***	-0.2899***	0.0092	-0.1914***	-0.2994***	-0.3331***	-0.2083***	-0.1719***
	(0.0177)	(0.0177)	(0.0140)	(0.0110)	(0.0081)	(0.0074)	(0.0054)	(0.0048)
Price×InsI	0.1257***				0.2204***			
	(0.0253)				(0.0112)			
Price×Ana		0.0431***				0.0577***		
		(0.0060)				(0.0022)		
Price×Short			-0.1661***				0.0142**	
			(0.0121)				(0.0049)	
Price×Post				0.0897*				-0.0015
				(0.0437)				(0.0009)
CV	control	control	control	control	control	control	control	control
_cons	-46.3764***	-40.8939***	-82.5703***	-45.6140***	-21.6731***	-16.2371***	-16.7129***	-26.1285***
	(2.8030)	(2.4759)	(2.5601)	(2.3835)	(1.1449)	(1.0307)	(0.9773)	(0.9789)
N	15611	20387	20387	20387	86662	112619	112619	112619
r2	0.2837	0.2777	0.2088	0.2760	0.1016	0.1033	0.0731	0.0977
F	212.7772	269.8616	191.9102	267.5860	297.0030	392.8301	317.0765	369.4486
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

Table 15. Results of factors affecting the premium of low-priced stocks under different conditions in the GEM

	Bull market				Bear market			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Price	-0.0341	-0.0276	0.0819	0.0198	-0.2773***	-0.2755***	-0.1995***	-0.1546***
	(0.0461)	(0.0660)	(0.0433)	(0.0393)	(0.0145)	(0.0159)	(0.0115)	(0.0123)
Price×InsI	0.1644				0.2424***			
	(0.0918)				(0.0267)			
Price×Ana		0.0142				0.0278***		
		(0.0226)				(0.0051)		
Price×Short			-0.2807***				-0.0214	
			(0.0391)				(0.0111)	
Price×Post				-0.1217				-0.0209***
				(0.0754)				(0.0025)
CV	control	control	control	control	control	control	control	control
_cons	-37.7085	-47.2990**	-164.0184***	-54.2768**	-29.8528***	-26.9480***	-37.0851***	-39.9141***
	(19.3208)	(17.6238)	(18.9564)	(16.8139)	(3.6453)	(3.3997)	(3.3555)	(3.1646)
N	1097	1426	1426	1426	16551	21197	21197	21197
r2	0.4253	0.4102	0.3094	0.4111	0.1254	0.1238	0.1227	0.1254
F	33.0528	40.5942	27.3058	40.7500	78.9784	99.6984	98.6915	101.1225
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

5.3 Robustness test.

5.3.1 Substituting impact factor variables

For Model 2 the level of analyst attention is replaced with the level of research attention RepAtt, which indicates the number of research reports that followed and analyzed the company during the year. Simultaneously, the cross-product term Price × Rep between the stock price and the concern of the research report is constructed. For model 4, the number of stock bar posts is substituted by the number of stock bar call posts up, a variable that represents the total number of call posts in that listed company's postings during the statistical period, while the cross-product Price x up of the stock price and the number of stock bar call posts is constructed. The indicator of up is sourced from the China Stock Bar Public Opinion Research Database of the CSMAR database.

Table 16 illustrates the results of the regression analysis under the overall A-share market. The regression coefficient of Price × Rep is significantly positive at the 1% level, indicating the same results as the degree of attention by analysts that in terms of the A-share market, increased attention by research reports diminishes the effect. The regression coefficient of Price × up is significantly negative at the 1% level, showing the negative relationship between the increasing number of call posts and the low-priced stock premium effect which is the consistent conclusion for the number of stock bar posts.

Table 16. Robustness test—Substituting impact factor variables

	Dependent variable: Return	
	Model 2	Model 4
Price	-0.3569***	-0.2026***
	(0.0052)	(0.0033)
Price×Rep	0.0467***	
	(0.0013)	
Price×up		-0.0001***
		(0.0000)
CV	control	control
_cons	-11.8394***	-21.3678***
	(0.6723)	(0.6324)
N	297804	297804
r2	0.1489	0.1453
F	1085.0070	1054.5243
p	0.0000	0.0000

Source: Author's calculation

5.3.2 Excluding stocks with share price less than 1 CNY

Stocks with share prices less than 1 CNY were excluded from the data due to the possibility of deliberately inflating the share price to avoid delisting by companies and then regression analysis was conducted on the overall A-share market.

From the regression results exhibited in Table 17, stock prices are significantly negatively correlated with returns in Models 1 to 4. The cross-multiplicative terms are all significantly positive at the 1% level except the one between stock price and share bar postings which is significantly negative at the 5% level, which are all aligned with the results of the previous tests.

Table 17. Robustness test— Excluding stocks with share price less than 1 CNY

	Dependent variable: Return			
	Model 1	Model 2	Model 3	Model 4
Price	-0.3354***	-0.3534***	-0.2476***	-0.2045***
	(0.0058)	(0.0052)	(0.0035)	(0.0034)
PriceInsI	0.2310***			
	(0.0081)			
PriceAna		0.0565***		
		(0.0016)		
PriceShort			0.0119***	
			(0.0033)	
PricePost				-0.0025**
				(0.0008)
CV	control	control	control	control
_cons	-17.5609***	-11.8578***	-19.2486***	-20.9341***
	(0.7495)	(0.6742)	(0.5988)	(0.6300)
N	216364	297796	297796	297796
r2	0.1460	0.1487	0.1169	0.1452
F	803.8419	1083.6295	1359.4695	1053.3410
p	0.0000	0.0000	0.0000	0.0000

Source: Author's calculation

6. Conclusions

First, this paper verified the presence of the low-priced stock premium effect in the Chinese A-share market through multiple regressions, and the negative correlation between stock price and stock return is significant in the overall A-share market, the MBM, the GEM market, and the STAR market.

Secondly, the premium on low-priced stocks is weakened by the increase in institutional investors' shareholding and analysts' attention throughout the sample period in all markets. The impact of the margin financing and securities lending on the low-priced stock premium is significantly weaker in the overall A-share market and the MBM, while it is significantly stronger in the GEM market. Shock bar posts perform a significant enhancing effect in all markets except a weakening effect in the MBM.

Finally, differentiating between bull and bear markets, the premium effect is lessened by the growing proportion of shares held by institutional investors and the level of attention by analysts in all markets. The influence of margin financing and securities lending on the premium effect of low-priced stocks is significantly strengthened in the bull market and reduced in the bear market in both the overall A-share market and the MBM and was also significantly strengthened in the GEM bull market. A notable enhancement effect is shown from share bar posting volume in the bear market in both the overall market and the GEM.

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