

The Impact of Investor Sentiment on IPO Price Suppression: Based on Empirical Analysis of ChiNext Sub-sectors

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Abstract. Since its establishment, China's stock market has had the characteristics of high IPO price suppression rate and investor investment sentiment, and since the prospect theory was proposed, investor sentiment has been considered to be an important factor affecting IPO price suppression. In this paper, a sample of 782 ChiNext IPO stocks from October 29, 2009 to December 31, 2020 is selected and the multiple regression model is used to empirically study the impact of investor sentiment on IPO price suppression. The empirical results show that market sentiment and individual stock sentiment have a significant positive impact on IPO price suppression. Further research found that in the sub-industry sample, the market sentiment was no longer significant, and the sentiment of individual stocks was still significant, while in the ChiNext non-manufacturing industry, the higher the market sentiment, the smaller the impact of individual stock sentiment on the IPO price suppression rate. Based on the research results, this paper puts forward relevant suggestions on the reform of information disclosure system, issuance mechanism and investor decision-making.

Keywords: IPO price suppression, Investor sentiment, GEM.

1. Introduction

IPO price suppression refers to the phenomenon that the primary market offering price of shares at the time of initial issuance is lower than the closing price of the secondary market on the first day. IPO price suppression will cause investors to blindly pursue new shares, resulting in the misallocation of funds in the secondary market, thereby affecting the allocation efficiency of the stock market. At the same time, when the price reduction occurs, the new and old shareholders hold the company's shares differently, the old shareholders suffer losses because the stock price decreases relative to the holding price, and the new shareholders gain income because the stock price rises relative to the purchase price. China's stock market has always had a very serious IPO price suppression phenomenon, which in turn makes investors blindly chase new in order to obtain excess returns, so that the stock price is higher than its true value in the short term and weakened for a long time.

In the past, most of the research on IPO price suppression has been based on the perspective of the effectiveness of the secondary market, including the principal-agent theory and the "winner's curse" theory, which cannot explain many anomalies in the securities market, and many studies have shown that the theory of price suppression based on behavioral finance is more explanatory. Behavioral finance theory believes that investors are irrational, and they will avoid losses, blindly speculate, overreact and other behaviors when making decisions, which will cause asset prices to shift from intrinsic value and become factors that suppress IPO prices. Investors will be affected by emotional factors when making investment plans, when they are in a positive mood, investors will be very tolerant of adverse information, only see the good side of things and ignore the bad side, but when they are depressed, investors will become meticulous and careful, and consider more comprehensively. China's stock market has short selling restrictions, arbitrageurs can not use arbitrage to completely eliminate the impact of irrational behavior, and the vast majority of investors in the stock market are individual investors, compared with institutional investors, individual investors have a low degree of professionalism, more likely to be affected by emotional factors, make irrational behavior, thereby affecting IPO price suppression.

GEM provides listing opportunities for growth innovators that cannot be listed on the Main Board, and the qualification of those companies is lighter. In the ChiNext market, the government regulates

it strictly, and investors often prefer the shares of ChiNext-listed companies in order to obtain excess returns. The healthy development of GEM will help provide a reliable platform for the development of emerging technologies and the transformation of the manufacturing industry.

However, in the specific analysis, the problem of IPO price suppression on ChiNext is more prominent. Short-term trading of new shares in the primary and secondary markets will cause market volatility, hinder the healthy development of the market, and detrimental the flow of funds to where they should go. On the ChiNext board, investors blindly pursue new shares, so that the companies in the board have a large amount of idle funds in their hands, while other non-ChiNext small and medium-sized high-tech enterprises cannot raise funds, resulting in waste of resources.

In the entire stock market, stocks are divided into different industries such as manufacturing, agriculture, forestry, animal husbandry and fishery, information technology, communication and cultural industries, construction, and social services. Based on the fact that investors in different industries have different expectations for the future return of stocks, IPO price suppression often shows different characteristics in different industries. For example, the manufacturing industry accounts for the majority of the stock market, but because investors are not optimistic about the traditional manufacturing industry, the IPO suppression rate of manufacturing-type enterprises is not outstanding, while the IPO suppression rate of other industries is surprisingly high due to their own characteristics.

2. Literature References and theoretical research

2.1 Literature References

IPO price suppression will cause losses to investors and hinder economic development, and there are many factors affecting IPO price suppression, including underwriter goodwill, media reports, information disclosure, investor sentiment and so on. Among them, investor sentiment is particularly important for its impact.

Traditional IPO price suppression research mainly includes two categories: principal-agent theory, "winner curse" theory, signal transmission theory, and underwriter goodwill theory, which mainly starts from the unequal information between traders and traders; The avoidance of litigation hypothesis, tax avoidance hypothesis, and agency cost reduction hypothesis, such theories mainly start from reducing related costs.

Underwriters and corporations have a tendency to undercut offerings to convey information to attract investors. Baron (1982) pointed out that underwriters undervalued offerings to avoid failure^[1], and Benveniste and Spindt (1989) argued that underwriters used underwriters to exchange information in the hands of investors^[2]. Regarding the "winner's curse" theory, Rock (1989) pointed out that there is a problem of adverse selection in the primary market for new shares, and issuers can only attract those investors who are not well-informed with low issue prices, resulting in IPO price depression^[3]. Allen and Faulhaber (1989) pointed out that in order to attract investors, companies that issue shares will convey good business performance information to investors, and this is done by lowering the price of shares at the time of issuance, and the losses incurred can be compensated for later refinancing^[4]. Carter and Manaster (1990) point out that underwriter goodwill correlates with the degree of enterprise risk, high underwriting goodwill, low enterprise risk^[5].

The principal-agent issue between managers and companies led to IPO price suppression. Timic (1988) argues that issuers and investors will undercut the issue to reduce liability in case of problems^[6]. Jensen and Meckling (1976) pointed out that the motivation of shareholders as managers is positively correlated with their shares, and corporate resources are appropriated by managers, resulting in a decrease in the value of the company and the creation of IPO price suppression^[7]. Yenmack (1996) and Eisenberg (1998), as well as Mak et al. (2003) using the examples of securities markets such as the United States, show that IPO price suppression is related to the number and structure of a company's management, and the more management and the richer the structure, the less effective the company's operation. If managers hold most of the company's stock, then the company's

operation is related to their income, they will seriously think about the company, and the IPO price suppression rate will be low.

Relevant domestic scholars have conducted many studies on IPO price suppression.

Information asymmetry between companies and investors can lead to IPO price suppression. Wang Hua and Zhang Chengrui (2005) studied the information asymmetry between companies and investors and found that the more a company discloses all aspects of its information to the public, the more it can raise the required funds at a lower cost^[8]. Cha Chifen and Liao Jiguang (2013) have verified that the "winner's curse" theory and signaling theory are not only applicable to foreign stock markets, but also to the Chinese stock market^[9]. Hu Dan and Feng Qiaogen (2013) found that IPO suppression rates tended to be higher for companies that passed firm audits with good results^[10].

Media coverage can influence IPO price reductions. Bing Wang and You Chen (2014) measured investor attention by Baidu's search volume, and found that the "hotter" companies on Baidu, the higher the IPO price suppression rate^[11]. Wang Changyun and Wu Jiawei (2015) found that the praise and disapproval of media reports can affect investors' judgment and thus their decisions about a particular stock. And investors are more susceptible to negative sentiment. They also found that media sentiment may be a surrogate variable for investor sentiment^[12].

Cheng Landong and Yi Zhigao (2017) show that the mass media are more likely to pay attention to well-known IPO underwriters, report and comment on them, and convey information to the public, thereby increasing the IPO price suppression rate, thus reflecting the positive influence of underwriter fame in IPO price suppression^[13]. Lin Yucheng and Lin Hong (2014) studied the impact of ChiNext underwriters' historical performance on their reputation and IPO discount rate, and showed that when the initial IPO yield was negative, the next IPO underwriting by the same underwriter would be reduced^[14]. The Chinese government's intervention in the stock market is very strong, and the IPO pricing control policy varies from year to year. Song Shunlin and Tang Siyuan (2017) show that strong government intervention, such as regulating IPO issuance prices, will have an impact on IPO price suppression, and when the government controls the issuance price, the IPO price suppression rate will be higher, and this positive correlation will be affected by emotions^[15]. Zhang Weidong et al. (2018) believe through empirical research that the price limit will strengthen the degree of IPO price suppression^[16].

2.2 Factors influencing investor sentiment

(1) Economic environment. The quality of the economy will affect the mood of investors, in the economic environment, investors will have good expectations for the future, this expectation will make them blindly optimistic, investors will accept all good news and deliberately avoid the bad news or find excuses to ignore the news.

(2) Investor sentiment will also be affected by relevant policies. The government formulates policies, such as monetary policy and fiscal policy, based on the country's overall economic regulation plan, which represent the direction in which the government wants the economy to adjust, thus reflecting whether the current economy is too hot or too cold, and the direction of future adjustment. It is easy for investors to observe these economic policies and predict the future direction of the economy accordingly, which can affect investor sentiment.

(3) Media coverage. News media coverage is an important channel for investors to obtain relevant stock information, and we can easily access relevant news these days. However, its authenticity and reliability cannot be guaranteed. Some media deliberately report the positive information of the relevant stock and ignore the negative information, or exaggerated and subjective, investors can easily be influenced, lose rational judgment, and be swayed by emotions.

2.3 The impact of investor sentiment on asset pricing

Investor sentiment affects asset pricing. Traditional economics assumes that investors are rational and make rational choices based on the information they receive, assuming that investor sentiment does not affect asset pricing. The behavior of irrational investors will produce differences in asset

prices in different time and space, that is, pricing bias. In an ideal environment, due to the existence of arbitrageurs, these pricing deviations can be eliminated by arbitrage, and a rational market can eventually be formed. However, due to the impact of arbitrage costs, policies, regions and other factors, pricing deviations cannot be completely eliminated, and the market cannot reach a rational state. Investors' investment behavior is influenced by emotions, causing asset prices to deviate from intrinsic levels, and this pricing deviation cannot be completely solved by arbitrage.

Based on the perspective of behavioral finance, investors cannot make the most reasonable judgment for some information, due to the limitations of their own ability and guide their investment behavior, and their consideration of information is often not comprehensive enough, thus being affected by emotional factors.

Investors are susceptible to positive or negative factors, and are not able to make rational judgments but are influenced by emotions to make investment decisions. The asymmetry between information will produce information advantages and information disadvantages for investors, the former has unique information and becomes very inflated, blindly confident in their own investment decisions, thereby pushing up stock prices and affecting pricing. The latter, because they know their own information disadvantages, they are afraid to take risks and dare not make independent decisions, so they have to imitate the former's investment decisions, resulting in short-term sharp fluctuations in stock prices in the market. Due to the failure of arbitrage behavior, asset prices eventually shift their intrinsic levels in the short term.

2.4 Research hypotheses are proposed

Some studies mostly study the overall market sentiment as investor sentiment, which will have strong limitations, because market sentiment is the same sentiment that every stock in the entire market has, while individual stock sentiment is the unique sentiment of a specific stock, only using a single market sentiment to measure investor sentiment, will ignore the impact of individual stock sentiment, not comprehensive consideration. Therefore, this article divides investor sentiment into market sentiment and individual stock sentiment, and comprehensively considers their impact on IPO price suppression.

Individual stock sentiment refers to the degree of investors' preference or dislike for a certain stock, and measures investor sentiment from a micro level. For a stock, according to the invalidity of the market, the information that investors can obtain the stock is mostly incomplete and outdated, because of the difficulty of obtaining information and the quality of information, investors can only rely on their own subjective will to judge. According to behavioral finance, investors are not rational people in economics, but irrational people who tend to make decisions that are influenced by emotional factors. If investors are divided into optimistic investors and pessimistic investors, optimistic investors are blindly confident in their own decisions, think that they have complete information, and they tend to attribute the good to their own judgment and the loss to external factors. When new shares are listed, due to the existence of short selling restrictions, bearish investors are unable to express their views, and the market is dominated by active investors, and their demand for shares will push up the stock price, resulting in IPO price depression.

Market sentiment refers to the collection of sentiment of all individual stocks in the entire market, measuring investor sentiment from a macro perspective. Investors' blind herd mentality makes them very sensitive to changes in the wind direction of the stock market, and they are influenced by market sentiment to make decisions. During a bull market, investors can earn excess returns by buying stocks, so the demand for shares increases, which drives up the stock price and may eventually increase the IPO price. In a bear market, on the contrary, investors tend to lose money buying stocks, so there is less demand for stocks, which lowers the stock price and may eventually reduce the IPO price depression. Therefore, this article makes the following assumptions:

Hypothesis 1: The higher the sentiment of individual stocks, the higher the IPO price suppression rate.

Hypothesis 2: The higher the market sentiment, the higher the IPO price suppression rate.

According to the data of the broad market index, turnover rate, and total turnover of the sector, investors in the market can easily observe the market sentiment, and they will take it into account in their own decisions, affect the sentiment of individual stocks, and thus affect the IPO price suppression. When market sentiment is high, any stock in the market can obtain higher returns, irrational investors are easily infected by the market atmosphere, they will not put eggs in the same basket, the heat for a particular new stock will be reduced and reduce its price expectations, when its price exceeds expectations will decisively abandon the stock and look for other stocks, thus affecting the IPO price reduction rate. On the contrary, when market sentiment is low, due to the historically high IPO price suppression rate of China's stock market, investors will pay more attention to new shares than existing stocks, and a large amount of money will pour into the IPO market, pushing up the price of new shares in the secondary market, thereby affecting the IPO price reduction rate. Therefore, the following hypothesis is made:

Hypothesis 3: Market sentiment reduces the effect of individual stock sentiment on IPO price reduction rates.

3. Study design

3.1 Sample selection and data sources

This paper selects ChiNext IPO stocks from October 30, 2009 to December 31, 2020, and obtains a total of 782 sample data, including a 44% limit on the first day of IPO between June 13, 2014 and August 14, 2020. The data in this article comes from CSMAR database and RESSET database.

3.2 Model settings

$$IPOR_i = \beta_0 + \beta_1 X_i + \mu_i \quad (1)$$

$$IPOR_i = \beta_0 + \beta_1 PLO_i + \beta_2 X_i + \mu_i \quad (2)$$

$$IPOR_i = \beta_0 + \beta_1 CICS_i + \beta_2 X_i + \mu_i \quad (3)$$

$$IPOR_i = \beta_0 + \beta_1 CICS_i + \beta_2 PLO_i + \beta_3 X_i + \mu_i \quad (4)$$

$$IPOR_i = \beta_0 + \beta_1 CICS_i + \beta_2 PLO_i + \beta_3 CICS_i * PLO_i + \beta_4 X_i + \mu_i \quad (5)$$

IROR refers to the revised IPO first-day yield, for new stocks within the limit of price and decrease, take the yield between the closing price and the issue price at the time of opening the limit minus the volatility of the ChiNext index during this period. *PLO* refers to the online application winning rate, which is used to measure the sentiment of individual stocks and is inversely proportional to the sentiment of individual stocks. *CICS* refers to the comprehensive investor sentiment variable to measure market sentiment, which is the use of PCA to comprehensively measure the number of new account openings, consumer confidence index, market turnover rate and closed-end fund discount rate four market sentiment variables. *X* refers to control variables, including *PLAC*, *DB*, *ROE*, *EPS*, *PB*, *PE*, *AGE*. *PLAC* refers to the scale of the IPO at the time of issuance, and the logarithmic treatment is taken here. *DB*, *ROE* and *EPS* refer to the asset-liability ratio, return on net assets and earnings per share of IPO issuers in the latest quarter. *AGE* refers to the number of days between the establishment of the enterprise and the initial public offering, which is treated logarithmically. *PB* and *PE* refer to the price-to-book ratio and price-to-earnings ratio of the company at the time of IPO, respectively. Table 1 is an explanation of all variables in the above model.

Table 1. Relevant variables

Independent variables	<i>IPOR</i>	Revised IPO price suppression rate
Explanatory variables	<i>PLO</i>	The winning rate of issuance, which negatively measures the sentiment of individual stocks
	<i>CICIS</i>	Combine sentiment variables to measure market sentiment positively
	<i>PLAC</i>	The scale of fundraising, taking the natural logarithm
Control variables	<i>DB</i>	Gearing ratio
	<i>ROE</i>	Return on equity
	<i>EPS</i>	Earnings per share
	<i>PB</i>	Issue price-to-book ratio
	<i>AGE</i>	Company age, taken as the natural logarithm
	<i>PE</i>	Issue P/E ratio

4. Empirical results and analysis

4.1 Descriptive statistics

Table 2 is a descriptive statistic for each variable, and it can be seen that the average value of IPO price suppression rate in the sample interval is 219.8%, the maximum value is 1917%, the minimum value is -17%, and the standard deviation is 2.61, which indicates that the IPO price suppression rate is generally high and highly volatile, and the gap between the maximum and minimum values is large. This is also in line with the highly speculative characteristics of the ChiNext market.

Table 2. Descriptive statistics

Variable	Number	Max	Min	Avg	Std
<i>IPOR</i>	782	19.17	-0.17	2.20	2.61
<i>PLO</i>	782	18.69	0.01	0.61	1.162
<i>CICSI</i>	782	50.48	38.65	43.90	3.13
<i>PB</i>	782	18.48	0.86	2.84	1.439
<i>DB</i>	782	0.85	0.04	0.37	0.15
<i>ROE</i>	782	0.64	0.00	0.24	0.08
<i>EPS</i>	782	7.72	0.00	0.99	0.66
<i>AGE</i>	782	9.44	5.71	8.32	0.52
<i>PLAC</i>	782	14.15	9.24	10.59	0.66
<i>PE</i>	782	642.60	10.17	50.54	38.20

Table 3 illustrates IPO price reduction rates in different years. It can be seen that since 2014, the IPO price suppression rate has been positive, and the IPO price suppression has a maximum value of 1917% in ten years in 2014, compared with before 2014, the average IPO price suppression rate has increased significantly, the variance is also significantly improved, and the phenomenon of new stock breakdowns no longer exists. This shows that the limit on the rise and fall of new stocks on the first day cannot effectively solve the IPO price suppression, but exacerbates the pricing problem in the primary and secondary markets to a certain extent.

Table 3. IPOR of different years

Year	Number	Mean	Var	Min	Max
2009	30	0.88	0.39	0.33	1.95
2010	99	0.37	0.28	-0.10	1.52
2011	112	0.24	0.33	-0.17	1.99
2012	70	0.23	0.27	-0.15	0.94
2013	50	1.58	1.14	0.19	5.92
2014	72	5.62	4.16	1.22	19.17
2015	71	5.44	2.22	1.89	13.06
2016	114	3.07	1.81	0.57	11.81
2017	21	2.54	1.96	0.32	6.48
2018	47	2.26	1.32	0.50	5.93
2019	96	2.44	1.83	0.43	10.61

4.2 Regression result analysis

4.2.1. Overall regression

In the regression results of Model 1, except for the insignificant P/E ratio, the remaining six control variables are significant at the 1% or 5% level, and the sign of the coefficient is the same as the previous prediction, which is in line with the practical significance, indicating that the control variable has a certain explanatory ability for the explanatory variables.

In Model 2, Model 3 and Model 4, the individual stock winning rate (*PLO*), market sentiment variable (*CICSI*), and both are added based on Model 1. The results show that the winning rate of individual stocks is significantly negatively correlated with the IPO price reduction rate at the 1% level, while the market sentiment variables are significantly positively correlated with the IPO price reduction rate at the 1% level, supporting hypotheses 1 and 2, while the control variables remain significant.

In Model 5, the multiplier of the winning rate of individual stocks and market sentiment variables is significantly positive about the IPO price suppression rate at the 1% level, and the winning rate of individual stocks is significantly negatively correlated with the IPO price suppression rate at the 1% level. The adjustment R side of Model 5 is 0.26, which is higher than 0.24 without multiplication, and the explanatory power of the model has been improved, indicating that market sentiment has a significant inhibitory effect on the relationship between the winning rate of individual stocks and the IPO price suppression rate, and the winning rate of individual stocks negatively measures the sentiment of individual stocks, that is, the higher the market sentiment, the weaker the impact of individual stock sentiment on IPO price suppression, supporting hypothesis 3.

Table 4. Overall regression results

Model	1	2	3	4	5
Dependent variable	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>
<i>PLO</i>		-0.43*** (-5.84)		-0.35*** (-4.50)	-8.99*** (-4.15)
<i>CICSI</i>			0.15*** (4.66)	0.09*** (2.84)	0.05 (1.29)
<i>PLOXCICSI</i>					0.21*** (3.99)
<i>PB</i>	-0.36*** (-5.60)	-0.31*** (-4.85)	-0.31*** (-4.76)	-0.28*** (-4.44)	-0.26*** (-4.13)
<i>PE</i>	-0.0020 (-0.70)	-0.0020 (-0.85)	-0.0010 (-0.28)	-0.0010 (-0.55)	-0.0010 (-0.41)
<i>DB</i>	-1.88*** (-3.39)	-1.49*** (-2.72)	-1.71*** (-3.12)	-1.45*** (-2.66)	-1.46*** (-2.70)
<i>ROE</i>	-4.75*** (-4.14)	-3.84*** (-3.38)	-3.48*** (-2.99)	-3.19*** (-2.77)	-3.39*** (-2.97)
<i>EPS</i>	0.41** (2.45)	0.38** (2.31)	0.30* (1.80)	0.32* (1.91)	0.37** (2.23)
<i>AGE</i>	0.55*** (3.16)	0.46*** (2.72)	0.33* (1.87)	0.34* (1.94)	0.39** (2.22)
<i>PLAC</i>	-0.82*** (-5.55)	-0.80*** (-5.53)	-1.01*** (-6.67)	-0.92*** (-6.14)	-0.92*** (-6.18)
<i>_cons</i>	8.83*** (4.07)	9.14*** (4.30)	5.83*** (2.61)	7.15*** (3.21)	8.84*** (3.93)
<i>N</i>	782	782	782	782	782
<i>R²</i>	0.21	0.24	0.23	0.25	0.27
<i>AdjR²</i>	0.20	0.23	0.22	0.24	0.26

4.2.2. Return by industry

The sample is divided into light industrial manufacturing, heavy industrial manufacturing and non-manufacturing for group regression, and the following table is obtained.

Tables 5 and 6 show the regression results of different models in different industries, and in model 2, it can be seen that in the light industrial manufacturing industry, the winning rate of individual stocks has the greatest negative impact on the IPO price suppression rate. Among the control variables, the asset-liability ratio and financing scale of light industry manufacturing had the greatest negative impact on the IPO price suppression rate, and the price-to-book ratio of heavy industry manufacturing had the greatest negative impact on the IPO price suppression rate. The P/E ratio is negative in light industrial manufacturing and non-manufacturing and positive in heavy industrial manufacturing, the return on equity is negative in heavy industrial manufacturing and non-manufacturing and positive in light industrial manufacturing, and the remaining control variables are less significant.

In Model 3, the heavy industry manufacturing market sentiment variable has the greatest positive effect on the IPO price suppression rate, and the remaining variables are the same as in Model 2.

In Model 4, after adding the market sentiment variable and the winning rate of individual stocks, the positive and negative and significant conditions of each variable are basically the same as adding the sentiment variable separately. In light and non-manufacturing industries, market sentiment variables are no longer significant.

In Model 5, after adding the multiplier of the market sentiment variable and the winning rate of individual stocks, the two sentiment variables of light industrial manufacturing and heavy industrial manufacturing are no longer significant, and their multipliers are not significant. Non-manufacturing multipliers are significantly positive at the 1% level about the IPO price suppression rate, and the winning rate of individual stocks is significantly negatively correlated with the IPO price suppression rate at the 1% level. The regulation R of Model 5 is 0.31, which is higher than 0.25 without

multiplication, and the explanatory power of the model has been improved, indicating that market sentiment has a significant inhibitory effect on the relationship between the winning rate of individual stocks and the IPO price suppression rate, and the winning rate of individual stocks negatively measures the sentiment of individual stocks, that is, the higher the market sentiment, the weaker the impact of individual stock sentiment on IPO price suppression, supporting hypothesis 3.

In Model 3, the light industrial manufacturing market sentiment variable (*CICSI*) is not significant, and the heavy industrial manufacturing and non-manufacturing market sentiment variable (*CICSI*) is significantly positively correlated with IPO price suppression at the level of 1% and 5%, respectively. In Model 4, the market sentiment variable (*CICSI*) only had a significant correlation at the 5% level in heavy manufacturing, but not in the remaining two sectors. This shows that in the sub-sector regression, the market sentiment variable (*CICSI*) is basically not significant, and hypothesis 2 is not satisfied.

In Model 2 and Model 4, the winning rate (*PLO*) of individual stocks in each industry is significantly negatively correlated with the IPO price suppression rate at the 1% level. In Model 5, the manufacturing sector individual stock winning rate (*PLO*) is not correlated with the IPO discount rate because of the impact of the multiplier added. In summary, the winning rate (*PLO*) of individual stocks is significantly negatively correlated with the IPO discount rate, that is, the sentiment of individual stocks is significantly positively correlated with the IPO price reduction rate, supporting hypothesis 1.

Table 5. Regression results by industry

Industry	Light manufactur -ing Model 2 Dependent variable <i>IPOR</i>	Heavy manufactur -ing 2 <i>IPOR</i>	Non manufactur -ing 2 <i>IPOR</i>	Light manufactur -ing 3 <i>IPOR</i>	Heavy manufactur -ing 3 <i>IPOR</i>	Non manufactur -ing 3 <i>IPOR</i>
<i>PLO</i>	-0.97*** (-3.47)	-0.340*** (-3.72)	-0.35*** (-3.12)			
<i>CICSI</i>				0.09 (1.32)	0.15*** (3.38)	0.13** (2.14)
<i>PB</i>	-0.22 (-1.60)	-0.44*** (-3.89)	-0.30*** (-3.02)	-0.23* (-1.67)	-0.40*** (-3.52)	-0.32*** (-3.25)
<i>PE</i>	-0.0090 (-1.28)	0.0050* (1.68)	-0.016*** (-2.67)	-0.0070 (-1.06)	0.0060* (1.93)	-0.013** (-2.14)
<i>DB</i>	-3.10*** (-2.73)	-0.48 (-0.61)	-2.04** (-1.97)	-3.28*** (-2.80)	-0.65 (-0.83)	-2.42** (-2.34)
<i>ROE</i>	2.08 (0.91)	-5.60*** (-3.32)	-5.56** (-2.56)	1.59 (0.66)	-5.67*** (-3.34)	-4.78** (-2.16)
<i>EPS</i>	0.27 (0.74)	0.40* (1.88)	0.45 (1.18)	0.43 (1.16)	0.36* (1.70)	0.31 (0.79)
<i>AGE</i>	0.34 (0.96)	0.40* (1.73)	0.40 (1.11)	0.43 (1.14)	0.22 (0.92)	0.31 (0.84)
<i>PLAC</i>	-1.16*** (-4.23)	-0.62*** (-3.01)	-0.41 (-1.24)	-1.31*** (-4.48)	-0.86*** (-4.00)	-0.61* (-1.76)
_cons	13.39*** (3.27)	7.82*** (2.62)	6.89 (1.54)	9.99** (2.18)	4.95 (1.59)	4.05 (0.87)
N	180	368	234	180	368	234
R ²	0.31	0.25	0.30	0.27	0.25	0.28
AdjR ²	0.28	0.24	0.27	0.23	0.23	0.26

Table 6. Regression results by industry

Industry	Light manufactur -ing 4	Heavy manufactur -ing 4	Non manufactur -ing 4	Light manufactur -ing 5	Heavy manufactur -ing 5	Non manufactur -ing 5
Model Dependent variable	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>
<i>PLO</i>	-1.10*** (-3.26)	-0.30*** (-2.68)	-0.31*** (-2.63)	-8.25 (-1.15)	-4.86 (-1.64)	-15.64*** (-3.74)
<i>CICSI</i>	-0.054 (-0.70)	0.10** (2.20)	0.08 (1.36)	-0.066 (-0.85)	0.082* (1.66)	-0.022 (-0.33)
<i>PLOXCICSI</i>				0.17 (0.99)	0.11 (1.54)	0.36*** (3.67)
<i>PB</i>	-0.23* (-1.67)	-0.39*** (-3.48)	-0.28*** (-2.82)	-0.23* (-1.70)	-0.39*** (-3.45)	-0.19* (-1.96)
<i>PE</i>	-0.0090 (-1.37)	0.0050* (1.73)	-0.014** (-2.21)	-0.0080 (-1.16)	0.0050* (1.81)	-0.013** (-2.21)
<i>DB</i>	-3.16*** (-2.77)	-0.46 (-0.58)	-2.00* (-1.93)	-3.28*** (-2.83)	-0.38 (-0.48)	-2.12** (-2.11)
<i>ROE</i>	1.72 (0.73)	-4.94*** (-2.90)	-5.11** (-2.33)	1.21 (0.50)	-4.97*** (-2.92)	-5.81*** (-2.72)
<i>EPS</i>	0.29 (0.80)	0.35 (1.63)	0.40 (1.03)	0.32 (0.88)	0.38* (1.77)	0.54 (1.43)
<i>AGE</i>	0.37 (1.03)	0.24 (1.00)	0.30 (0.84)	0.42 (1.14)	0.29 (1.19)	0.27 (0.76)
<i>PLAC</i>	-1.09*** (-3.73)	-0.77*** (-3.57)	-0.55 (-1.60)	-1.10*** (-3.76)	-0.77*** (-3.57)	-0.61* (-1.82)
_cons	15.01*** (3.19)	5.86* (1.89)	5.31 (1.15)	15.32*** (3.25)	6.35** (2.04)	10.83** (2.29)
N	180	368	234	180	368	234
R ²	0.31	0.26	0.30	0.32	0.27	0.34
AdjR ²	0.27	0.24	0.28	0.27	0.25	0.31

4.3 Robustness test

Due to the influence of market fluctuation factors within the limit range of rise and fall, a separate return is carried out outside the range of rise and fall to test the robustness.

As can be seen from Table 7, in Model 2, the winning rate of individual stocks is significantly negatively correlated with the IPO price reduction rate at the 1% level, and the market sentiment index is significantly positively correlated with the IPO price reduction rate at the 1% level in Model 3, that is, both individual stock sentiment and market sentiment are positively correlated with the IPO price reduction rate, supporting hypotheses 1 and 2. In Model 5, the multiplier term is significantly negatively correlated with the IPO price suppression rate, and the winning rate of individual stocks is significantly positively correlated with the IPO price suppression rate, and the adjustment R side of Model 5 is 0.66, which is higher than 0.65 without multiplication item, and the explanatory power of the model has been improved, indicating that the market sentiment has a restraining effect on the relationship between the winning rate of individual stocks and the IPO price suppression rate, and the winning rate of individual stocks negatively measures the sentiment of individual stocks, that is, the higher the market sentiment, the weaker the impact of individual stock sentiment on IPO price suppression, supporting hypothesis 3. Similar to the previous analysis, the robustness test passed.

Table 7. The regression results outside the limit of the rise and fall

Model	1	2	3	4	5
Dependent variable	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>	<i>IPOR</i>
<i>PLO</i>		-0.093*** (-3.38)		-0.0060 (-0.24)	2.24*** (3.26)
<i>CICSI</i>			0.19*** (12.94)	0.19*** (12.30)	0.21*** (12.51)
<i>PLOXCICSI</i>					-0.053*** (-3.27)
<i>PB</i>	-0.088*** (-3.84)	-0.082*** (-3.61)	-0.053*** (-2.75)	-0.053*** (-2.74)	-0.055*** (-2.88)
<i>PE</i>	0.016*** (17.17)	0.016*** (16.47)	0.014*** (17.54)	0.014*** (17.33)	0.014*** (17.42)
<i>DB</i>	-0.035 (-0.13)	0.086 (0.33)	0.22 (1.00)	0.23 (1.02)	0.25 (1.15)
<i>ROE</i>	-1.96*** (-3.87)	-1.93*** (-3.86)	-0.82* (-1.90)	-0.83* (-1.91)	-0.59 (-1.37)
<i>EPS</i>	0.38*** (4.16)	0.42*** (4.58)	0.18** (2.25)	0.18** (2.26)	0.12 (1.45)
<i>AGE</i>	0.38*** (5.50)	0.37*** (5.44)	0.17*** (2.80)	0.17*** (2.81)	0.14** (2.38)
<i>PLAC</i>	-0.21*** (-3.43)	-0.20*** (-3.34)	-0.40*** (-7.62)	-0.40*** (-7.52)	-0.41*** (-7.75)
_cons	-0.87 (-0.97)	-0.84 (-0.96)	-5.11*** (-6.30)	-5.09*** (-6.21)	-5.96*** (-6.99)
N	394	394	394	394	394
R ²	0.50	0.52	0.65	0.66	0.66
AdjR ²	0.50	0.51	0.65	0.65	0.66

4.4 Countermeasure recommendations

(1) Based on the perspective of reducing information asymmetry, this paper argues that the relevant information disclosure system should be added to increase the effective information that ordinary investors can obtain, so that retail investors can invest more rationally rather than being influenced by emotions. At the same time, the number of shares held by institutional investors should be increased. Because compared with ordinary retail investors, institutional investors are more professional, have a stronger ability to obtain information, and are easier to make rational judgments.

(2) This paper believes that relevant mechanism reforms should be carried out, taking into account the different IPO price suppression rates in different industries, and targeting market sentiment variables and individual stock sentiment variables. Reform of the system related to IPO issuance. At the same time, we should further improve the short-selling mechanism of China's securities market, so that the market is no longer dominated by optimistic investors.

(3) For ordinary investors, based on the significant positive effect of investment sentiment on IPO price suppression, investors can take the market sentiment into investment decisions when they fully understand the relevant information of the company, increase the investment scale when the market sentiment is high, and reduce the investment scale when the market sentiment is low. In ChiNext IPOs, investors can increase their investment in heavy industry enterprises when market sentiment is high when market sentiment is high, and moderately increase investment in non-manufacturing industries when market sentiment is low. When the sentiment variables of individual stocks are high, increase investment in light industrial enterprises.

(4) The government should reasonably liberalize the regulation of IPO issuance and make pricing more market-oriented.

5. Conclusion

(1) This paper verifies the influence of investor sentiment on IPO price suppression, and the results show that under certain other variables, market sentiment and individual stock sentiment have a significant positive correlation on IPO price suppression, that is, the higher the investor sentiment, the greater the degree of IPO price suppression, and the market sentiment variable has a significant inhibitory effect on the influence of individual stock winning rate and IPO price suppression rate, and the winning rate of individual stocks negatively measures individual stock sentiment, that is, the higher the market sentiment, the smaller the impact of individual stock sentiment on the IPO price suppression rate.

(2) This paper conducts a sub-industry study on the IPO of ChiNext stocks, and divides IPO enterprises into manufacturing enterprises and non-manufacturing enterprises, among which manufacturing enterprises are divided into light industry enterprises and heavy industry enterprises. The results show that market sentiment is no longer significant in the regression of sub-sectors, and the winning rate of individual stocks that negatively measures the sentiment of individual stocks is still significant in the regression of sub-sectors. Light industry manufacturing stock sentiment has the greatest impact on IPO price reduction rate, heavy industry manufacturing market sentiment has the greatest impact on IPO price reduction rate, only the market sentiment variable in non-manufacturing industry has a significant inhibitory effect on the relationship between the winning rate of individual stocks and the IPO price reduction rate, and the winning rate of individual stocks negatively measures the sentiment of individual stocks, that is, the higher the market sentiment, the smaller the impact of individual stock sentiment on the IPO price suppression rate.

(3) The price limit policy of strong government intervention not only cannot reduce the degree of IPO price suppression, but also aggravates the IPO price suppression to a certain extent. Reducing government regulation and making pricing more market-oriented may be a good way to reduce IPO price inhibitions

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