A Study on the Impact of Investor Sentiment on Initial Public Offering Underpricing

Chuanhui Lin

School of Economics, Shandong University of Finance and Economics, Shandong, 250014, China
tam3667@email.phoenix.edu

Abstract. The phenomenon of Initial Public Offering underpricing is present in nearly every country or region with a stock market. To explain this occurrence, Western scholars have proposed a range of theoretical hypotheses, though these theories often have weak explanatory power and exhibit certain limitations. As research in behavioral finance has deepened, scholars have found that investor sentiment is a key factor influencing IPO underpricing. This paper provides a detailed analysis of the definition and measurement methods of investor sentiment, summarizes the fundamental concepts and traditional theoretical explanations of IPO underpricing, and incorporates extensive empirical studies to demonstrate how investor sentiment impacts the degree of IPO underpricing. The research reveals that high investor sentiment typically leads to greater IPO underpricing, whereas low sentiment may decrease underpricing. This paper also reviews existing research findings and outlines current limitations, proposing possible future research directions. It suggests that to better understand and predict IPO underpricing, future studies must account for the dynamics of investor sentiment in varying market environments.

Keywords: IPO Underpricing, Investor Sentiment, Stock Market.

1 Introduction

The post-Initial Public Offering performance is an anomaly in the financial world, with one notable example being the underpricing of IPOs. The high rate of IPO underpricing, where the market trading price of new shares on the first day of listing is much higher than the issue price, has drawn significant attention in academic circles. Practical results show that rational explanations for the mystery of IPOs are not entirely convincing, and many foreign rational theories cannot be directly applied to explain domestic phenomena. Additionally, with the rise of behavioral finance, more scholars have begun to study this phenomenon in-depth from the perspective of investor sentiment. They have found that investor sentiment is one of the key factors influencing IPO underpricing. Behavioral finance suggests that investors are not perfectly rational when making investment decisions. Instead, they are influenced by various cognitive and behavioral biases, which cause their decisions to deviate from

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the optimal choices under perfectly rational conditions. Therefore, in the domestic market, investor sentiment is indeed a significant factor in IPO underpricing [1].

Current research focuses on the interaction between IPO price limit policies and investor sentiment, the impact of registration system reforms on IPO underpricing, the effects of new inquiry regulations, and the intermediary role of investor sentiment. These studies broaden the application of behavioral finance theory in the field of IPO underpricing. First, by reviewing and analyzing past literature, this paper provides new perspectives and a foundation for policy formulation and market supervision. For example, improving the quality of information disclosure and reducing information asymmetry can help minimize the negative impact of investor sentiment on IPO underpricing. Second, this study offers a more rational basis for investment decisions. It can help company managers determine whether to pursue equity or debt financing, guiding them to make the right financing choices. Finally, considering the differences in investor structures and market characteristics across different sectors, studying the impact of investor sentiment on IPO underpricing in these sectors (such as the main board, small and medium-sized board, growth enterprise board, and science and technology board) can lead to targeted suggestions for improving the market mechanisms of each sector.

This paper first defines the concepts of investor sentiment and IPO underpricing, then reviews the relevant literature, and analyzes how investment and sentiment affect IPO underpricing. Finally, it discusses future research directions and policy recommendations.

2 Investor Sentiment

There is no single definition of investor sentiment. In summary, existing definitions generally describe investor sentiment as a deviation from traditional rational theory, specifically in two aspects: investor beliefs and preferences. However, in empirical studies, scholars often define investor sentiment by focusing on deviations from rational expectations, particularly from the perspective of beliefs. They view investor sentiment as investors' irrational expectations of future returns, while largely overlooking the role of preference factors.

There are various methods to measure investor sentiment, as follows.

The hidden index method is an indirect approach that measures investor sentiment by processing stock market financial data using certain statistical techniques. While it can accurately reflect investor sentiment in the securities market, it does come with some limitations, such as time lags and one-sidedness [2]. Explicit indicators, on the other hand, generally rely on direct survey methods. These surveys gather data from a large number of participants, incorporating their expectations and judgments about market trends to measure investor sentiment.

To address the shortcomings of relying on a single indicator, scholars have begun exploring sentiment indicators from multiple perspectives. In 2004, Chen Jiawei combined three variables—IPO issuance, first-day return rate, and the average weekly discount rate of closed-end funds—to develop an investor sentiment indicator. He found that this indicator effectively reflected investment behavior and used it to study the relationship between investor sentiment and the investment behavior of listed companies. In 2008, Zhou Xiaohua and colleagues simplified the method for measuring investor sentiment by using only the winning rate and the first-day turnover rate.

Baker and Wugler, in 2006, utilized six indexes—including the fund discount rate and dividend yield—to extract principal components and construct the Compound Sentiment Index (BW index). Han Liyan and Wu Yanran selected the first-day turnover rate of IPOs and the monthly number of new accounts to establish an investor sentiment index. They concluded that investor sentiment has a significant positive correlation with stock returns. Additionally, Yi Zhigao and Mauning developed a monthly Sentiment Composite Indicator (CISI) based on proxy indicators such as closed fund discounts, after excluding macroeconomic factors. Zhang Hang's comprehensive sentiment index, which includes six variables such as closing discount rates, market turnover, and the ratio of new highs and lows in the stock market, has also been widely applied in the study of explicit indicators [2].

3 Theoretical Basis of IPO Underpricing

The current theories on IPO underpricing can be categorized into four main types: information asymmetry theory, institutional reason theory, control theory, and behavioral methodology. The following is an analysis of each of these four theories.

3.1 Information Asymmetry

This is one of the traditional theories to explain the phenomenon of IPO underpricing. Traditional IPO underpricing research theories are based on asymmetric information model. From the perspective of information asymmetry, scholars believe that the issue price is set too low mainly because of information asymmetry among issuers, underwriters and investors, which leads to uncertainty about the real market value of new shares. So issuers and underwriters deliberately set the price of new shares low. The following are several common theories in the theory of information asymmetry:

Principal-agent theory. Baron and Holmstrom pointed out the potential conflict of interest between the issuer and the underwriter: although the issuer demands to maximize the proceeds of the issue, the underwriter has the incentive to set a lower price in order to reduce the cost and workload during the underwriting period [3]. The winner's curse theory. This theory holds that in an incomplete market, there is information asymmetry. When investors in the market are divided into information holders and non-information holders, the latter may overpay due to insufficient information, resulting in the phenomenon of winner's curse. In order to avoid this situation, the issuer may deliberately reduce the issue price. Signal theory. The issuer may set a low issue price to convey the signal of the company's value, such as the proportion of insider shares, the reputation of professional institutions, etc., in order to attract investors and reduce the risk caused by information asymmetry. Information display theory. Benveniste and Spindt argue that issue pricing is done through corporate delegation. Before the IPO price is set, the underwriters promote the IPO by collecting certain so-called 'tendencies of interest' from investors who are often present in the primary market, such as institutional investors. At this stage, the underwriters approach investors who are willing to order new shares without price restrictions to understand their demand plans. They believe that during the pre-underwriting stage of the IPO, they can obtain information that is very important for the underwriters to determine the issue price and maximize the overall revenue of the company [4].

3.2 The Theory of Institutional Reasons

The theories behind institutional reasons for IPO underpricing can be categorized into several aspects: litigation avoidance hypothesis, price support theory, tax perspective, and the inside share lock-up hypothesis.

Litigation Avoidance Hypothesis: Tinic's paper and Hughes & Thakor's paper suggest that, under the strict information disclosure system in the United States, underwriters bear legal responsibility for concealing or providing false information in listing applications. This exposes them to significant litigation risks. To avoid such risks, underwriters often set the issue price at a lower level [5, 6]. However, Drake and Vetsuypens found that the difference in average initial returns between IPO cases that faced lawsuits and those that did not was small. This indicates that IPO underpricing does not necessarily protect underwriters from litigation [7].

Price Support Theory: Ruud proposed the price support theory of IPO underpricing. According to this theory, lead underwriters do not deliberately underprice new shares. Instead, they aim to set the issue price at the expected market value after listing. If the new shares fall below the issue price after listing, the lead underwriter intervenes to support the price. This intervention eliminates the negative returns that would otherwise occur, resulting in an expected initial return for new shares that is greater than zero [8].

Tax Perspective: Rydqvist studied the tax perspective in Swedish IPOs, a view also supported by Taranto. Although the tax perspective cannot fully explain IPO underpricing on its own, it helps to clarify the cross-sectional differences in underpricing returns across various cases [9].

Inside Share Lock-Up Hypothesis: The lock-up period for inside shares is an institutional arrangement present in most markets, typically lasting six months. Aggarwal, Krigman, and Womack analyzed the impact of lock-up periods on the pricing of new issues. They argued that, since management shareholders can only sell their shares after the lock-up period ends, their goal is to maximize the value of the shares at that time. Underpricing new stocks leads to a sharp rise in share prices on the first day (or early days), attracting the attention of analysts, the media, and the public. This creates information momentum and increases investor demand, allowing management shareholders to sell their shares at a higher price after the lock-up period expires. Therefore, they believe that IPO underpricing is a strategic behavior employed by management shareholders [10].

3.3 Ownership and Control Theory

Brennan and Franks argue that when companies go public, underpricing provides managers with an opportunity to protect their private interests through share distribution. Managers avoid allocating large shares to individual investors to prevent scrutiny of their non-value-maximizing activities. This underpricing creates excess demand, enabling managers to ration shares among investors and ultimately maintain control over those holding smaller stakes. The empirical significance of this model is that underpricing results in excess demand, leading to a broad dispersion of ownership [11].

Additionally, Stoughton and Zechner's model suggests that underpricing new shares encourages oversight from external shareholders. These shareholders can monitor the actions of management, thereby reducing agency costs [12].

3.4 Behavioral Method Theory

The theories of behavioral methods can be categorized into several areas: information superposition theory, investor sentiment theory, prospect theory, and mental accounting. Irrational investor behaviors, such as overconfidence and herd mentality, influence both the demand for and pricing of new shares, which in turn affects IPO underpricing. As a key aspect of market psychology, investor sentiment plays a significant role in IPO underpricing. This article will now explore the impact of investor sentiment on IPO underpricing.

4 The Impact of Investor Sentiment on IPO Underpricing

With the rise of behavioral finance, scholars suggest that while the issue price of new shares may be fair, IPO underpricing occurs due to investor demand and irrational behavior. Ritter and Welch proposed studying IPO underpricing from the perspective of behavioral finance. According to this view, irrational investor sentiment and other factors cause stocks to often trade at prices higher than their intrinsic value after listing. This indicates that the market is not efficient, and IPO underpricing may stem from mispricing in the secondary market [13].

Ljungqvist, Nanda, and Singh argue that in a market with strict short-selling restrictions, stock prices are determined by irrationally optimistic investors. These investors are often willing to pay prices higher than the intrinsic value of stocks due to their unrealistic expectations [14]. Derrien constructed a behavioral finance model to explain how excessive optimism among investors contributes to IPO underpricing. He validated the model using data from new shares issued in the French stock market, demonstrating its accuracy [15].

Shiller contends that capital markets are inefficient in the early stages of a stock listing, and the initial returns on new shares are driven by speculation. When speculators have a strong desire to speculate and new shares are oversubscribed, the pent-up demand in the primary market fully emerges in the secondary market. This pushes up stock prices and results in underpricing [16]. According to Welch, investors do not always base their investment decisions on the information they possess but are often influenced by the actions of other investors. This creates a "conformity" phenomenon, where investors buy when they see an enthusiastic response from others and refrain from buying when they observe indifference [17].

5 Current Limitations and Further Research Directions

Differences in Concept Definition and Measurement Methods: Various studies define and measure investor sentiment differently, leading to inconsistent research conclusions. Some studies use a single indicator, such as the turnover rate, to measure investor sentiment, while others employ multiple indicators to construct investor sentiment indexes, such as market turnover rate, the number of new accounts opened, and the market's average P/E ratios. These differences result in varying judgments of investor sentiment, which subsequently affect the conclusions regarding "the impact of investor sentiment on IPO underpricing".

Particularities of the Market Environment: The structure of China's stock market is primarily composed of individual investors, whose irrational behavior is more pronounced compared to institutional investors in mature Western markets. Additionally, China's stock market has a different institutional environment, market supervision, and information disclosure mechanisms than developed countries. These factors may influence the impact of investor sentiment on IPO underpricing.

The Issue of Information Asymmetry: Although analysts' follow-up and predictions are expected to reduce information asymmetry and improve market efficiency, their role in the Chinese market may differ due to the lack of effective oversight. The accuracy of their forecasts and the divergence of opinions on IPO underpricing remain uncertain.

Further research on the impact of investor sentiment on IPO underpricing needs to consider factors such as the unique market environment, information asymmetry, institutional complexity, and the limitations of existing research methods. This approach will lead to more comprehensive and accurate conclusions. Future studies can explore how policy guidance and market education can optimize investor sentiment and reduce irrational investment behavior, thereby enhancing IPO pricing efficiency.

For example, the government and regulators could implement policies to boost investor confidence, such as halving the stamp duty on securities transactions, optimizing regulatory arrangements for IPOs and refinancing, and regulating share sales. These measures would send positive signals to the market, reducing investors' uncertainty and risk perception.

Strengthen Market Supervision: Define a "red line" for monitoring program trading, reduce the frequency and speed of high-frequency trading, and take other actions to improve the fairness of market trading, thus bolstering market confidence.

Market Education and Transparency: Provide sufficient market information and education to help investors better understand market dynamics and risks, allowing for more rational investment decisions. This includes educating investors about sentiment indicators, such as the number of daily limits, connected boards, space board height, break rate, and yesterday's daily limit premium.

Leverage Behavioral Finance: By studying investor psychology and behavior, regulators can better grasp market sentiment dynamics and develop more effective policies to guide and stabilize investor sentiment.

Strengthen Risk Management: Encourage investors to adopt diversified investment strategies, set stop-loss points, and avoid impulsive trading decisions caused by market sentiment fluctuations.

Promote Corporate Transparency: Require listed companies to provide accurate and timely financial reports and business information to reduce information asymmetry and build investor confidence in the market.

Establish a Mature Market Culture: Foster a long-term investment mindset among investors, reduce speculative behavior, and gradually cultivate a more mature and stable market culture through education and market practices.

These measures can help mitigate excessive fluctuations in market sentiment and promote the stable and healthy development of the market.

Moreover, as China continues to reform its capital market registration system, future research should focus on how investor sentiment influences IPO underpricing under this system and explore how institutional design can reduce underpricing. Additionally, given the uniqueness of different markets and industries, more detailed studies on the role of investor sentiment in various market environments are crucial for further academic investigation.

6 Conclusion

In conclusion, this study highlights the significant influence of investor sentiment on IPO underpricing, emphasizing a clear positive correlation between heightened market sentiment and increased underpricing. When investor sentiment is strong, the demand for new shares tends to rise, driving up IPO underpricing rates and contributing to irrational market behaviors. This suggests that investor sentiment plays a crucial role in shaping market dynamics, especially during initial public offerings.

Moreover, the study also identifies the impact of the IPO price limit policy on underpricing. By affecting investor sentiment, this policy indirectly raises the underpricing rate, serving as an intermediary factor that magnifies the underpricing effect. This finding underscores the importance of understanding the psychological and behavioral aspects of investors in the context of IPO pricing.

Overall, the insights gained from this research suggest that managing investor sentiment and refining IPO regulations can help mitigate excessive underpricing and promote a more stable and efficient market environment. Further research in this area could explore the long-term implications of sentiment-driven pricing, offering policymakers and market participants guidance on how to better balance market efficiency with investor behavior.

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